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## Engaging Elementary Preservice Teachers in Reflection For, In, and On Practice During an Approximation of Practice in TeachLivETM Using Sentence Frames for English Language Learners

Courtney Lopas  
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ENGAGING ELEMENTARY PRESERVICE TEACHERS  
IN REFLECTION FOR, IN, AND ON PRACTICE  
DURING AN APPROXIMATION OF PRACTICE IN TEACHLIVE™ USING  
SENTENCE FRAMES FOR ENGLISH LANGUAGE LEARNERS

by

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A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the School of Teacher Education  
in the College of Community Innovation and Education  
at the University of Central Florida  
Orlando, Florida

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Major Professor: Andrea Gelfuso

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## **ABSTRACT**

The purpose of this study was to explore how a teacher educator (myself) and preservice teachers engaged in joint reflection-for-action, reflection-in-action, and reflection-on-action during an approximation of practice in a TeachLivE™ setting using sentence frames to support English Language Learners' (ELLs') writing. Four elementary education preservice teachers participated in this study based on set inclusion criteria. This action research study included video-recorded approximations of practice, the sentence frames preservice teachers submitted in the skill seven module, reflective journaling, and analytic memoing. Instructional sequence analysis through transcription, holistic coding, message units, action units, interaction units, instructional sequences, and phase units were used to analyze the data and create instructional maps of the interactions. Findings showed improvements to my practice of using joint reflection with preservice teachers at each cycle. These improvements included decreasing the interruptions to the preservice teachers, supporting the preservice teachers in identifying the problem and multiple solutions, incorporating further reflection within reflection-on-action, holding the reflective conversation, and supporting judgment by identifying the pros and cons of each solution. Additionally, through the creation of instructional maps, I identified the reflective phase units, instructional sequences, and interactions made to engage in joint reflection with the preservice teachers. Looking more closely, using questioning as a reflective move facilitated reflection while informing provided the preservice teacher with content knowledge on using sentence frames with ELLs. These findings contribute to the field by demonstrating one way teacher educators can (a) incorporate reflection within their courses to develop preservice

teachers' pedagogical skills and (b) the reflective moves that support joint reflection on pedagogical decisions between teacher educators and preservice teachers.

In loving memory of my Dad, Doug Lopas

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## TABLE OF CONTENTS

|   |    |
|---|----|
| LIST OF FIGURES .....                               | x  |
| LIST OF TABLES .....                                | xi |
| CHAPTER ONE: INTRODUCTION .....                     | 1  |
| Statement of the Problem .....                      | 1  |
| Purpose of the Study .....                          | 8  |
| Research Question .....                             | 8  |
| Significance .....                                  | 8  |
| Operational Definitions .....                       | 9  |
| Delimitations .....                                 | 13 |
| Summary .....                                       | 13 |
| CHAPTER TWO: LITERATURE REVIEW .....                | 14 |
| Literacy in Elementary Grades .....                 | 14 |
| Role of Oral Language in Literacy Development ..... | 15 |
| Reading and Writing Connection .....                | 16 |
| ELLs' Literacy Development .....                    | 18 |
| Mixed Reality Simulations and TeachLivE™ .....      | 26 |
| TeachLivE™ .....                                    | 27 |
| Reflection .....                                    | 30 |
| Reflection-For-Action .....                         | 31 |
| Reflection-In-Action .....                          | 31 |
| Reflection-On-Action .....                          | 32 |
| Inclusion Criteria .....                            | 32 |
| Procedures .....                                    | 33 |
| Reflection as a Written Artifact .....              | 34 |
| Reflection as a Process .....                       | 38 |
| Summary .....                                       | 43 |
| CHAPTER THREE: THEORETICAL FRAMES AND METHODS ..... | 45 |
| Theoretical Frameworks .....                        | 45 |
| Reflection .....                                    | 45 |



|  |     |
|--|-----|
| Constructionism .....  | 52  |
| Methods .....  | 55  |
| Research Question .....  | 56  |
| Research Site .....  | 56  |
| Access .....   | 61  |
| Pilot Study .....  | 61  |
| Methodology of Current Study .....   | 63  |
| Action Research Approach and Rationale .....   | 64  |
| Site and Participants .....  | 66  |
| Position and Role of the Researcher .....  | 67  |
| Data Collection .....  | 70  |
| Timeline .....   | 74  |
| Data Analysis .....  | 75  |
| Trustworthiness .....  | 80  |
| Ethical Concerns .....   | 82  |
| Summary .....  | 82  |
| CHAPTER FOUR: FINDINGS .....   | 83  |
| Introduction .....   | 83  |
| Action Research Process – Cycles of Improvement .....  | 84  |
| Cycle 1 .....  | 85  |
| Cycle 2 .....  | 97  |
| Cycle 3 .....  | 105 |
| Evolution of Practice .....  | 115 |
| Occurrence of Reflective Elements – Instructional Maps .....   | 117 |
| Interactions on the Preservice Teacher’s Lesson Prior to the Simulation .....  | 123 |
| Interactions on the Preservice Teacher’s Lesson During the Simulation .....  | 127 |
| Revisiting the Preservice Teacher’s Lesson After the Simulation .....  | 134 |
| Reflection as a Unit .....   | 139 |
| Identifying Reflective Moves to Carry Reflection Through Reflection-for-action, Reflection-in-action, and Reflection-on-action ..... | 139 |
| Summary .....  | 149 |

|   |     |
|---|-----|
| CHAPTER FIVE: DISCUSSION.....   | 150 |
| Discussion of Findings .....  | 150 |
| Instructional Maps of Joint Reflection .....  | 151 |
| Enlarging the Unit of Joint Reflection.....   | 160 |
| Supporting Preservice Teachers in Reflection Takes Considerable Skill and Knowledge of<br>the Reflective Process and the Content Reflected On ..... | 162 |
| Limitations .....   | 164 |
| Implications for Practice .....   | 165 |
| Recommendations for Future Research .....   | 170 |
| Summary .....   | 172 |
| APPENDIX A SUMMARY OF TEACHLIVE™ EMPIRICAL STUDIES.....   | 174 |
| APPENDIX B SUMMARY OF REFLECTION EMPIRICAL STUDIES .....  | 176 |
| APPENDIX C EXPLANATION OF RESEARCH.....   | 182 |
| APPENDIX D UCF INSTITUTIONAL REVIEW BOARD APPROVAL .....  | 185 |
| APPENDIX E TEACHLIVE™ CONSENT FORM .....  | 188 |
| APPENDIX F REFLECTIVE JOURNAL GUIDING QUESTIONS .....   | 190 |
| APPENDIX G LAURA’S SENTENCE FRAMES .....  | 192 |
| APPENDIX H KATIE’S SENTENCE FRAMES .....  | 194 |
| APPENDIX I TYLER’S SENTENCE FRAMES.....   | 197 |
| APPENDIX J EMILY’S SENTENCE FRAMES.....   | 203 |
| APPENDIX K LAURA’S INSTRUCTIONAL MAP .....  | 205 |
| APPENDIX L KATIE’S INSTRUCTIONAL MAP .....  | 208 |
| APPENDIX M TYLER’S INSTRUCTIONAL MAP .....  | 211 |
| APPENDIX N EMILY’S INSTRUCTIONAL MAP .....  | 214 |
| REFERENCES .....  | 218 |

## LIST OF FIGURES

|  |     |
|--|-----|
| Figure 1: Cycles of Inquiry .....  | 71  |
| Figure 2: Moves to Support a Preservice Teacher in Identifying the Problem and Multiple<br>Solutions ..... | 95  |
| Figure 3: Connecting Reflection-For-Action With Reflection-In-Action .....                                 | 111 |
| Figure 4: Example of Analysis .....  | 118 |
| Figure 5: Example of Instructional Map .....   | 119 |

## LIST OF TABLES

|  |     |
|--|-----|
| Table 1 Sentence Frames by Proficiency Level.....  | 5   |
| Table 2 Description of Data Sources .....  | 74  |
| Table 3 Data Collection Timeline.....  | 75  |
| Table 4 Data Collection and Data Analysis Timeline .....   | 80  |
| Table 5 Teacher Educator Interrupting Preservice Teacher .....   | 86  |
| Table 6 Interaction A .....  | 88  |
| Table 7 Interaction B .....  | 90  |
| Table 8 Interaction with Tyler .....   | 99  |
| Table 9 Identifying the Problem and Multiple Solutions .....   | 103 |
| Table 10 Emily Describing Her Lesson.....  | 106 |
| Table 11 Emily's First Interaction With Edith .....  | 108 |
| Table 12 Emily's Reflection-On-Action .....  | 113 |
| Table 13 Instructional Map of Interactions on the Preservice Teacher's Lesson Prior to the<br>Simulation ..... | 124 |
| Table 14 Interactions Leading to Dissonance .....  | 128 |
| Table 15 Interactions Leading to Analysis and Judgment .....   | 130 |
| Table 16 Interactions Leading to Synthesis .....   | 137 |
| Table 17 Katie's Reflection-For-Action .....   | 140 |
| Table 18 Katie Interacting With Edith.....   | 142 |
| Table 19 Katie's Reflection-On-Action .....  | 144 |
| Table 20 Connecting Reflection-On-Action .....   | 147 |

## **CHAPTER ONE: INTRODUCTION**

The purpose of this qualitative action research study was to explore how a teacher educator (myself) and preservice teachers engaged in joint reflection-for-action, reflection-in-action, and reflection-on-action during an approximation of practice in a TeachLivE™ setting using sentence frames to support English Language Learners' (ELLs') writing. This chapter begins with the statement of the problem and how this study addressed the problem. The research question, significance of the study, and operational definitions follow, ending with study delimitations.

### Statement of the Problem

The Common Core State Standards (CCSS) (Common Core State Standards Initiative, 2010), the academic standards for K-12 that set the requirements for what students at each grade level should know in math and English language arts, should be achieved by all students. These standards contain challenging demands for reading and writing, including:

- Determining central ideas and themes,
- Interpreting words and phrases in text
- Writing coherent text appropriate to the purpose and audience,
- Composing arguments, narratives, and informative texts, and
- Utilizing appropriate evidence and reasoning.

In 2020, the National Assessment of Educational Progress (NAEP) reported the few students meet these expectations in reading and writing. These results from the NAEP show less than

40% of students in fourth, eighth, and 12 grades achieved the proficient level in reading, and fewer than 30% of students achieved the proficient level in writing (NAEP, 2020). Regarding ELLs, only 10% of fourth grade, 4% of eighth grade, and 3% of 12<sup>th</sup> grade ELLs scored at or above the proficient level in reading (NAEP, 2020). On the most recent writing assessment, 8% of fourth grade ELLs performed at or above proficiency level, while 1% of eighth and 12<sup>th</sup> grade ELLs demonstrated similar proficiency (NAEP, 2002; National Center for Education Statistics [NCES], 2012). These results suggest a great need to implement effective reading and writing instruction so all students, including ELLs, can succeed.

As indicated by the NAEP assessment scores, the development of students' writing skills is vital. However, both reading and writing include similar cognitive processes and knowledge representations (Fitzgerald & Shanahan, 2000; Glenn, 2007; Salvatori, 1983; Shanahan, 2016). For example, when a child learns to actively engage in reading through reflecting, interpreting, and evaluating a text, these same patterns will support the child in actively interacting and composing their own writing rather than just reproducing text (Salvatori, 1983). Reading and writing are related, but the relationship is also bidirectional (Glenn, 2007). Reading can support the development of writing through intertextuality, as students see examples of text structure, syntax, and other elements of writing used effectively in literature (Berninger et al., 2002). Furthermore, developing writing skills can support comprehension and other aspects of reading as students learn the skills and processes that go into creating text (Graham & Herbert, 2010). Because of the interrelatedness and bidirectional nature of reading and writing, writing instruction strengthens students' composing skills, and improves their reading skills.

Furthermore, the NAEP results show ELLs perform at drastically lower levels than their native English-speaking peers in reading and writing, resulting in an urgent need to improve ELLs' learning. To promote the equitable education of ELLs, the Equal Educational Opportunities Act of 1974 and the Every Student Succeeds Act (ESSA) of 2015 were established to ensure public schools provide a space in which English learners can fully participate in, and meet the requirements of, their grade level curriculum (US Department of Education, 2016). However, many teachers face challenges in effectively meeting the needs of ELLs due to limited teacher preparation and professional development in supporting ELLs (Bunch, 2013; Lucas et al., 2008). For example, the "2020 What's Hot in Literacy Report" identified increasing equity and opportunity for all learners as a top five critical topics (International Literacy Association [ILA], 2020b). According to the ILA (2020b), the barriers to equitable literacy education include the following: (a) inadequate support and (b) limited educational resources for English learners. Similarly, 37% of teachers, higher education professionals, and literacy consultants agreed that providing support to English learners is the greatest challenge to literacy (ILA, 2020b).

The challenge of providing support to ELLs is especially problematic as the K-12 ELL population is continuing to increase (Lucas et al., 2008; Villegas et al., 2018; Yough, 2019). Since 2004, there has been a 1.5% increase in the number of students (1.5 million) in US public schools (NCES, 2020). Also, the state of Florida is ranked third in the country for ELLs, with over 265,000 ELL students or 10.1% (Florida Department of Education, 2020). Consequently, many, if not all, teachers will be required to implement research-based teaching practices to ensure ELLs' academic success.

To prepare all teachers to provide effective instruction to ELLs, teacher preparation programs must help preservice teachers develop professional understanding and pedagogy in research-based practices. Scaffolding is one such form of effective instruction for reading and writing in which the teacher chunks student learning and provides tools for support. Teachers can use language-based scaffolds like graphic organizers, a list of transitional words, sentence frames, and checklists to support all students as they engage in writing. Unless teachers acquire the knowledge and skills to use language-based supports, the gap in writing scores between native English speakers and non-native English speakers could continue or expand (NAEP, 2002; NCES, 2012).

Sentence frames are one research-based language support that is used across content areas to support ELLs' writing (Baker et al., 2014; Carrier & Tatum, 2006; Donnelly & Roe, 2010; Kim et al., 2011). Creating and using sentence frames effectively with ELLs is challenging because of the required content knowledge and skill. First, preservice teachers must understand how to create appropriate, differentiated sentence frames based on the world-class instructional design and assessment (WIDA) language proficiency standards and the language requirements of the writing task (Carrier & Tatum, 2006; Donnelly & Roe, 2010; WIDA, 2007). Depending on the proficiency level of the ELL, the complexity of the sentence can be increased or decreased by altering the number of blanks, the level of vocabulary, and the complexity of the sentence (Donnelly & Roe, 2010). For example, if ELLs were responding to a writing prompt on their favorite animal, the following sentence frames could be used for each proficiency level.



Table 1

*Sentence Frames by Proficiency Level*

| Proficiency level              | Sentence frames  |
|--------------------------------|--|
| Beginner<br>(Level 1 or 2)     | I like _____.<br>or<br>My favorite animal is a _____.                                      |
| Intermediate<br>(Level 3 or 4) | My favorite animal is a _____ because _____.   |
| Advanced<br>(Level 5 or 6)     | Although most people like _____, my favorite animal is a _____<br>because _____ and _____. |

Next, preservice teachers need to understand how to provide instruction with the sentence frames (Baker et al., 2014; Carrier & Tatum, 2006). It is not enough to simply hand the sentence frames to an ELL and expect the tool to provide the appropriate writing support. Instead, the preservice teacher needs to introduce the sentence frames by explaining the purpose of the frames, echo or choral read the sentence frames together, model how to use the sentence frames, and then echo or choral read the completed sentence frames at the end (Carrier & Tatum, 2006; Diamond & Greenberg, 2018). Preservice teachers need to practice creating and using sentence frames with ELLs; teacher preparation programs can provide valuable opportunities for preservice teachers to develop pedagogical skill in creating and utilizing sentence frames as a language-based scaffold for writing through approximations of practice (Grossman et al., 2009).

An approximation of practice involves the preservice teacher engaging in a component of complex practice with support in an environment created for learning (Grossman et al., 2009; Kavanagh et al., 2020; Schutz et al., 2019). Approximations can be placed along a continuum from less to more authentic (Grossman et al., 2009). The most common settings for approximations of practice are role-playing within a methods course (a less authentic experience)

and within field experience placements (a more authentic experience) (Forzani, 2014; Jao et al., 2020; Kazemi et al., 2016). Fewer studies have investigated the use of virtual reality simulated approximations of practice (Chazan et al., 2018). Approximations of practice within a simulated environment provide a more realistic approximation than role-playing and provide several distinct affordances (e.g., a safe environment for preservice teachers to learn, in-the-moment reflection through pausing, a virtual classroom that includes all proficiencies of ELLs) (Dotger, 2015; Driver et al., 2018; Thompson et al., 2019). As preservice teachers practice the complex practice of using sentence frames to support ELLs' writing, the simulation allows for the preservice teacher or the teacher educator to pause the simulation when the preservice teacher gets stuck or the lesson is not going as planned to identify the problem and possible solutions together. For this study, the mixed-reality simulator TeachLivE™ (<http://teachlive.org/>) was used for the preservice teachers to approximate using sentence frames with ELLs. In Chapter Two, the literature related to virtual reality simulators and TeachLivE™ is further reviewed. Chapter Three describes the context of TeachLivE™ in more detail and explains how it was used for this study.

An essential component to approximations of practice is a skilled teacher educator to support preservice teachers to see and understand through reflection (Gelfuso & Dennis, 2014; Kazemi et al., 2016; Schutz et al., 2019; Thompson et al., 2019). Supporting preservice teachers in the process of reflection is a challenge as the skilled teacher educator needs to know both the content and reflection process to be successful, and even then, reflection is not guaranteed to occur (Gelfuso & Dennis, 2014). For example, to support preservice teachers as they practice using sentence frames with ELLs, teacher educators must be skilled in the reflective process and have

strong content knowledge in creating and using sentence frames based on the WIDA English language proficiency standards. However, the research on reflection has focused on written reflections after the experience, rather than on reflection guided by a skilled teacher educator before, during, and after the experience (Gelfuso & Dennis, 2014; Jao et al., 2020; Thompson et al., 2019). To provide a more supportive and structured reflection, teacher educators can engage preservice teachers in reflection-for-action, reflection-in-action, and reflection-on-action (Dewey, 2018; Schon, 1983; van Manen, 2015). Furthermore, few studies have been conducted to understand better the type of moves teacher educators utilize to move through the reflective process. In Chapter Two, the reflective process and each of these components is further described.

In response to the low performance of ELLs in writing, the need for teachers with solid pedagogical skill in scaffolding ELLs' writing through the use of language-based supports, and the challenges of engaging in reflection with preservice teachers, this study investigated how a teacher educator and preservice teachers jointly reflect before, during, and after an approximation of practice within TeachLivE™ to develop preservice teachers' pedagogical skill in utilizing sentence frames to support ELLs' writing. My research further adds to the literature focusing on how a virtual reality simulation can provide an approximation of practice that is closer to authentic teaching while still providing an environment in which the preservice teacher can be supported through strategic reflective moments.

### Purpose of the Study

The purpose of this qualitative action research study was to explore how a teacher educator (myself) and preservice teachers engage in joint reflection-for-action, reflection-in-action, and reflection-on-action during an approximation of practice. TeachLivE™ served as the setting, using sentence frames to support ELLs' writing to improve my practice of facilitating reflection as a process and better understand the reflective moves made during reflection to support the preservice teacher.

### Research Question

Research questions for an action research investigation should come from one's own curiosity about professional practice by homing in on the relationship between oneself and their practice and what can be learned by looking closely at oneself rather than distancing oneself from the research (Pinnegar & Hamilton, 2009). Therefore, the research question for this study was:

**RQ1:** How do a teacher educator and elementary preservice teachers engage in joint reflection during an approximation of practice in a TeachLivE™ setting to support the preservice teachers' professional use of sentence frames as a scaffold for ELLs' writing?

### Significance

Action research seeks to understand better and improve practice (Meyer, 2000); therefore, this study helped me as a teacher educator better understand and improve my practice of using joint reflection with preservice teachers as they use sentence frames with ELLs. In addition to the impact action research has on one's personal teaching, it also improves "the understanding and

development of educational theory that leads to better educational experience for teacher educators, teacher candidates they educate, and the students they will educate” (Pinnegar & Hamilton, 2009, p. 165). Through the investigation of pedagogical practice, action research findings can impact pedagogy. For example, the findings from this study contribute to the body of literature regarding how teacher educators incorporate reflection to develop preservice teachers’ pedagogical skills. Additionally, the findings from this study contribute to the research exploring ways to support the core practice of developing preservice teachers’ practice of providing accommodations for language and learning (Grossman et al., 2019). Student learning can also benefit from action research as teacher educators become more skilled practitioners (Dosemagen & Schwalbach, 2019). This study demonstrates one way that teacher educators can advance preservice teachers in their knowledge and pedagogical skill in using sentence frames to support ELLs’ writing through joint reflection on their practice with a more knowledgeable other.

### Operational Definitions

Action Research – “a form of self-reflective problem solving, which enables practitioners to better understand and solve pressing problems in social settings” (McKernan, 1988, p. 6).

Action Units – are determined post-hoc and “are comprised of one or more message units that show a semantic relationship among message units and represent an observed intended act by a speaker” (Green & Kelly, 2019, p. 266).

Approximation of practice – opportunities for preservice teachers to engage in practice in proximity to the real thing in a setting that allows for extra support and optimal learning (i.e., role-playing, microteaching, simulations, and rehearsals; Schutz et al., 2019).

English Learner – “is an individual who meets four criteria:

- 1) is aged 3 through 21;
- 2) is enrolled or preparing to enroll in an elementary or secondary school;
- 3) meets one of the following criteria—
  - a. was not born in the United States, or whose native language is a language other than English;
  - b. is a Native American or Alaska Native, or a native resident of the outlying areas; and comes from an environment where a language other than English has had a significant impact on the individual’s level of English language proficiency (ELP); or
  - c. is migratory, whose native language is a language other than English, and who comes from an environment where a language other than English is dominant—and
- 4) has difficulties in speaking, reading, writing, or understanding the English language, that may be sufficient to deny the individual
  - a. the ability to meet the challenging state academic standards;
  - b. the ability to successfully achieve in classrooms where the language of instruction is English; or
  - c. the opportunity to participate fully in society. (Goldenburg, 2020, S132; National Clearinghouse for English Language Acquisition, n.d., para. 2)”.

English Language Learner – an immigrant or native born non-English speaker that enters the K-12 school system as a student learner of the English language who may benefit from various types of language support programs (National Council of Teachers of English, 2008; Carrasquillo et al., 2004). For the purposes of this study, the term English Language Learner is used.

Interaction Units – “are sequences of actions (i.e., comprised of message units) tied to turn exchanges as signaled by participants through message and action cohesion and determined by the social, semantic, and contextual cues” (Green and Kelly, 2019, p. 266).

Instructional Sequence Units – or sequence units “are cohesive thematically tied interactions identified post hoc through semantic and contextual cues. These units may be thematically tied or may show potential divergences from the developing theme” (Green and Kelly, 2019, p. 267).

Literacy – “The ability to identify, understand, interpret, create, compute, and communicate using visual, audible, and digital materials across disciplines and in any context. Over time, literacy has been applied to a wide range of activities and appears as computer literacy, math literacy, or dietary literacy; in such contexts, it refers to basic knowledge of rather than to anything specific to reading and writing” (ILA, 2020a).

Message Units – are defined post hoc and “are the smallest unit of sociolinguistic meaning” (Kelly & Green, 2019, p. 265).

Mixed Reality Simulation – “provides an opportunity for preservice teachers to practice what they are learning before stepping into a classroom and providing live instruction. It removes the potential for harm to living, breathing students and creates an environment where novice preservice teachers can not only take risks but can also risk being “seen as weak or insecure”

without being in front of “an actual classroom full of students” (Hughes et al., 2015, p. 135)” (Murphy et al., 2018, p. 2).

Phase Units – “represent sequences of tied SUs that form the foundation of the developing activities marking the ebb and flow of concerted and coordinated action among participants. Phase units reflect a common content and activity focus of the group” (Green & Kelly, 2019, p. 267).

Reflection – “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of grounds that support it, and the further conclusions to which it tends” (Dewey, 2018, p. 8).

Reflection-for-action – “to deliberate about possible alternatives, decide on courses of action, plan the kinds of things we need to do, and anticipate the experiences we and others may have as a result of expected events or of our planned actions” (van Manen, 2015, p. 101)

Reflection-in-action – “to come to terms with the situation or problem with which we are immediately confronted. This stop-and-think type of reflection permits us to make decisions virtually on the spur of the moment” (van Manen, 2015, p. 101)

Reflection-on-action – “to make sense of past experiences and thus gain insights into the meaning of the experience we have with children. As a result of recollective reflection we may become more experienced practitioners as teachers or parents because our lives have been enriched by the reflective experiences that offered us new or deeper understanding” (van Manen, 2015, p. 101)

Sentence Frame – a language-based scaffold to support written communication by providing the language structure with fill-in-the-blank sections for specific words (Tretter et al., 2014).



Writing – “The process of recording language graphically by hand or other means, as by letters, logograms, and other symbols” (ILA, 2020a).

### Delimitations

Participants of this study were undergraduate elementary preservice teachers enrolled in section 0004 of the course *Language Arts in the Elementary School*. Preservice teachers in other programs, like secondary education, were not included in the sample of participants. Additionally, participants had to agree to participate in the study, be video-recorded, and complete the MELTS skill seven module and the TeachLivE™ approximation of practice.

### Summary

This study investigated how a teacher educator and preservice teachers engage in joint reflection to develop the teacher educator’s practice of supporting joint reflection and the preservice teachers’ knowledge and skill in using sentence frames to support ELLs’ writing. As most previous research studies have focused on written reflection in teacher education or one component of reflection, more research is needed on how reflection can be used as a unit consisting of reflection-for-action, reflection-in-action, and reflection-on-action.

In the next chapter, a review of the literature on the use of reflection in teacher education, sentence frames as a language-based scaffold, and TeachLivE™ are described. Chapter Three explains the theoretical frameworks of reflection and constructionism and how they impacted the methodology and design of the current study. Chapter Three also includes specific details of the study by articulating the participants, researcher positionality and role of the researcher, data collection procedures, data analysis, trustworthiness, and ethical concerns.

## **CHAPTER TWO: LITERATURE REVIEW**

The purpose of this literature review is to summarize the literature on: (a) the role of literacy in elementary grades, and for ELLs in particular, (b) using sentence frames to support ELLs' writing and how teacher preparation provides instruction on sentence frames to preservice teachers, (c) the use of mixed-reality simulations in teacher preparation and more specifically TeachLive™, and (d) the use of reflection in teacher education.

### Literacy in Elementary Grades

With few students meeting the expectations set in place through the Common Core State Standards, changes are needed to improve the literacy outcomes. The What's Hot Report of 2020 identified building early literacy skills through a balanced approach of foundational and language comprehension instruction as the top topic to improve the current literacy outcomes (ILA, 2020b). Foundational skills, including phonological awareness and phonics, and language comprehension instruction consisting of instruction to improve a child's ability to understand oral and written language creates a strong foundation for later reading and writing (Bothum, 2020). The literacy development of young children begins with oral language and continues to progress to reading and writing (Shanahan, 2006). Oral language not only precedes reading and writing, but it also supports the development of these skills (Berninger, 2000; Wood, 1981). For example, the National Early Literacy Panel found oral language correlated with growth in vocabulary and listening comprehension (Strickland & Shanahan, 2004). Additionally, in the position statement on phonological awareness in early childhood literacy development, the

International Literacy Association explains the importance of phonological awareness, an oral language skill, in decoding, spelling, vocabulary, fluency, and comprehension (ILA, 2019). Therefore, elementary students must receive comprehensive literacy instruction, including receptive and expressive skills, to develop their literacy (Gambrell et al., 2015). The following sections provide information on the role of oral language in literacy acquisition, after which I describe the role of reading and writing. I then end with the literacy needs of ELLs with an emphasis on their writing needs.

### Role of Oral Language in Literacy Development

A child's oral language development impacts their reading and writing abilities (Cumming, 2016; Jimenez et al., 2011; Silverman et al., 2020). For example, Roth et al. (2002) examined multiple components of oral language and found phonological awareness supported children's word reading whereas semantic knowledge supported reading comprehension; although the relationship between oral language and reading comprehension is much stronger than the relationship between oral language and reading accuracy (Storch & Whitehurst, 2002). With the connection between oral language and reading comprehension being the strongest, it makes sense that the relationship between oral language and reading increases as a child gets older and is more focused on comprehension over decoding words (Silverman et al., 2020; Strickland & Shanahan, 2004). However, oral language development is still important for younger children as a child that faces challenges with oral language early on can develop reading difficulties later (Adolf et al., 2010; Storch & Whitehurst, 2002). From these findings on the impact of oral language on reading comprehension, instruction in oral language needs to include exposure to

the language and explicit, effective instruction across varying components of language (Foorman et al., 2016; Silverman et al., 2020).

With writing development, oral language skills like phonological awareness, vocabulary development, and sentence structure lay the foundation for similar skills in writing (Shanahan, 2006). At the early stages of literacy, a teacher can utilize a student's oral language skills to have them orally produce their ideas for the teacher to model their composition (Graham et al., 2012). Then as a child progresses, they can take a verbal message they wish to communicate and work to align the appropriate signs and symbols to communicate the message in writing (Dyson, 1983). Later in one's writing development, when the focus of writing is no longer on constructing written symbols, it is then that oral language skills like speaking cohesively support the child to write more cohesively (Rentel, 1988). Furthermore, writing can also influence oral language development, like using morphemes (Shanahan, 2006). As shown by the literature, students' background knowledge in oral language skills can be applied strategically as a resource to provide support when reading and writing.

### Reading and Writing Connection

Just as oral language is related to reading and writing, there is also a connection between reading and writing in that one's reading ability affects their writing and one's writing ability affects their reading (Butler & Turbill, 1984; Graham, 2020; Stotsky, 1983; Tierney & Shanahan, 1991). This is because readers and writers rely on similar foundations of knowledge like domain knowledge, metaknowledge about written language, knowledge of written language features, and procedural knowledge (Fitzgerald & Shanahan, 2000). The shared knowledge theory emphasizes

this relationship by explaining that the knowledge that a reader draws on is similar to the knowledge they draw on when writing (Graham, 2020). For example, as students read a text, they interact with the structure, vocabulary, and spelling. The information learned about structure, vocabulary, and spelling can then be used as a student composes their text (Graham, 2020). Additionally, reading practices like reading a text, interacting and interpreting text with others, and critiquing text can all improve writing by considering the author's intentions and then applying similar strategies as they write (Graham, 2020). Graham and Herbert (2011) further articulate the reading and writing relationship in their meta-analysis by examining whether writing instruction improved reading performance. They found that writing instruction positively impacted students' reading abilities by developing their knowledge and skill in reading. Graham et al. (2018) engaged in another meta-analysis to investigate whether reading instruction improved students' writing and found that instruction focused on improving reading skills and knowledge improved students' writing. Therefore, one's past experiences in reading and writing influence their current experiences in reading and writing (Graham, 2020).

Looking more closely at the impact of instruction in specific reading skills on writing, instruction in phonemic awareness and phonics has a positive effect on spelling and instruction in reading comprehension positively impacts writing quality (Berninger et al., 2002; Graham et al., 2018; Shanahan, 2006). For example, Berninger et al. (2002) found that accurate word reading facilitates typical developing writers' ability to write words correctly. Graham (2020) further articulated the importance of accurate word reading on spelling when he explained instruction in phonemic awareness, phonics, and fluency develops information about letters and sounds that can be used when spelling words. Additionally, the spelling patterns used by a

student to correctly spell a word can be used to decode words accurately. Accurately writing words is important in younger grades as spelling directly relates to the quality of writing produced (Berninger et al., 2002). Thus, developing specific reading skills can have positive outcomes on writing.

Since reading and writing are reciprocal processes, literacy instruction is most effective when they are combined, and the connections are explicitly taught (Shanahan, 2006; Tierney & Shanahan, 1991). Readers and writers use common cognitive strategies, and when a teacher provides instruction on these strategies, improvements are seen in both (Fitzgerald & Shanahan, 2000; McCutchen, 2000; Swanson & Berninger, 1996). However, instruction in just reading or just writing is not sufficient for the other to fully develop as there are differences in each process (Shanahan, 1988; Stotsky, 1983). Consequently, from the interconnectedness of listening, speaking, reading, and writing, each of these processes interacts and impact one another at varying degrees across one's literacy development.

### ELLs' Literacy Development

Comprehensive literacy instruction is also vital for ELLs. It is not sufficient to provide instruction in reading and writing alone, as oral English proficiency plays a prominent role in reading comprehension and writing for ELLs (August & Shanahan, 2006; Goldenburg, 2020). Therefore, oral English instruction must be included within literacy instruction so all ELLs can move beyond word-level skills like decoding and word recognition and into text-level skills like writing and comprehension (August & Shanahan, 2006).

ELLs require additional English-language development instruction that supports the specific literacy instruction provided through modeling, using visuals and gestures to support comprehension of content, opportunities for listening comprehension and oral responses, graphic organizers, and interactive scaffolded discussions (Baker et al., 2014; Goldenburg, 2020). Although the foundational literacy skills that native English speakers need to develop are the same as the foundational skills ELLs must learn, ELLs have the additional challenge of developing their literacy skills while also learning the language (Goldenburg, 2020; Short & Fitzsimmons, 2007). Providing English-language development instruction, especially in oral language proficiency, at the beginning stages develops ELLs' literacy skills (Ehri et al., 2007; Goldenburg, 2020; Saunders et al., 2006). The need for support in developing English proficiency is further built upon as ELLs progress in grades and are expected to read complex text and write at more advanced levels (Goldenburg, 2020).

Due to the importance of incorporating comprehensive instruction that includes English language development instruction, teachers need to engage the ELLs' listening, speaking, reading, and writing skills as they utilize sentence frames to write. Listening can be incorporated as the teacher reads aloud the sentence frames, reads the key vocabulary from word banks, and reads the completed sentences aloud at the end. The ELLs can be engaged in speaking as they talk with the teacher about their writing ideas and read their completed sentences either independently or together through echo or choral reading. Reading can occur as the ELLs read the sentence frames, read the words in the word bank, and end the lesson by reading their completed paragraph. To incorporate writing, the ELL students can write the words in the blank to complete their sentence.

ELLs do not come with a blank slate. Instead, they bring rich cultural, educational, and linguistic experiences that can be drawn and built upon as they learn in English (Cummins, 2005; Goldenburg, 2013; Marsh, 2018). For example, ELLs have varying degrees of language proficiency in their native language and should be encouraged and taught how to use their native language to support their learning of English (August & Shanahan, 2006; Marsh, 2018). By using one's native language as a support to learning English, the ELL can apply the common cognitive and academic proficiency, referred to as "common underlying proficiency," that is similar across languages (Cummins, 2005). As the ELL's common underlying proficiency develops, their skill in both their native language and English grows. Therefore, rather than seeking a deficit view of ELLs and focusing on their weaknesses, we can instead focus on their strengths and encourage developing literacy in more than one language by explicitly teaching ELLs how to strategically use their biliterate abilities (Kibler, 2014).

When providing literacy instruction to ELLs, one must consider their English proficiency level to ensure the instruction is comprehensible and they can actively participate (Goldenburg, 2020). All ELLs have different instructional needs based on the literacy development they have in their native language and their English proficiency level. In the next section, I describe what proficiency levels are and their impact on the instruction and scaffolds needed during literacy instruction.

### *Proficiency Levels*

When ELLs start school they are assessed to determine their proficiency level as they begin an ESL program, and their progress is monitored throughout until they exit the program. Six



proficiency levels align with the language development of acquiring English as an additional language. These proficiency levels begin with entering and continue with beginning, developing, expanding, bridging, and end with reaching (World-Class Instructional Design and Assessment [WIDA] Consortium, 2007). Each proficiency level outlines what a student can understand and generate in three areas: linguistic complexity, vocabulary usage, and comprehensibility (WIDA Consortium, 2007). Teachers use the proficiency level of an ELL to better understand the scaffolds and supports they need to achieve the content being taught (Cummins, 2005).

For this study, the preservice teacher interacted with a level one, entering, ELL named Edith, and a level three, developing, ELL named Edgar. I selected a beginning and developing ELL for the study as both of these levels benefit from accommodations and scaffolds that are unique to the proficiency level and therefore require the preservice teacher to vary their language, instruction, and materials appropriately. An advanced ELL, one at the proficiency level five or six, was not selected as these ELLs need very few, if any, accommodations as they can already understand and generate oral and written language comparable to their native English peers (WIDA Consortium, 2007). Thus, I outline what an ELL at the level one and three proficiency level can understand and do.

An entering, level one ELL can comprehend one-step questions, commands, directions, and information when represented through images (WIDA Consortium, 2007). When producing language, a level one ELL can use individual words or short phrases (WIDA Consortium, 2007). For example, a level one ELL in third to fifth grade can use visual and interactive support to write short responses using a word bank and answer oral questions with single words (WIDA Consortium, 2012; WIDA Consortium, 2016). A developing, level three ELL can understand and

produce general content area language and expand on sentences verbally or in writing with the occasional support of visuals; however, there may be grammatical and semantic errors that maintain meaning but hinder communication (WIDA Consortium, 2007). For example, a level three ELL in third to fifth grade can use visual and interactive support to create a simple narrative and expository text and connect related ideas (WIDA Consortium, 2012; WIDA Consortium, 2016).

English learners, depending on their proficiency level and the task at hand, will likely need accommodated and differentiated learning tasks to support their literacy development while maintaining the rigorous standards set in place (Gambrell et al., 2015; Goldenburg, 2013). Unfortunately, ELLs often receive instruction concentrated on lower-level skills and rarely experience authentic academic content (Amendum & Fitzgerald, 2010; Griffo et al., 2015). Therefore, scaffolds can be used in order to ensure all ELLs are exposed to rigorous content that they can understand.

### *Scaffolds and Sentence Frames*

As this study focused on scaffolding ELLs' writing, I investigated the research on scaffolds used to support ELLs' writing. Several studies explored scaffolds that can help improve ELLs' writing as a whole (Birketveit & Rimmereide, 2017; Humphrey & Macnaught, 2016; Lesaux et al., 2014), while others specifically focused on improving ELLs' text-based writing (Bantis, 2010; O'Hallaron, 2014; Squire & Clark, 2019). In addition, the focus of writing varied with some researchers focused on planning (Wei et al., 2014), opinion essays (Squire & Clark, 2019), argumentative essays (Kim & Nam, 2019), and the growth of ELL writing holistically

(Humphrey & Macnaught, 2016). From these studies, the following best practices were found to support ELLs' writing in generating ideas, organization, and providing evidence: modeling, providing individualized instruction, support from a more knowledgeable other, utilizing genre-specific graphic organizers, and language-based supports like sentence frames (Baker et al., 2014; Bantis, 2010; Birketveit & Rimmereide, 2017; Humphrey & Macnaught, 2016; O'Hallaron, 2014; Squire & Clark, 2019; Wei et al., 2014). For the purpose of this study, the focus of this review is on the language-based scaffold of sentence frames to support ELLs' writing.

Research on sentence frames first developed from the idea of formulaic language units and lexical phrases (Nattinger & DeCarrico, 1992; Wood, 2002). Formulaic language units are groups of words like *on the other hand* that are learned and remembered in long-term memory as a unit and not individually. By remembering these units of words as a phrase, fluency is supported, and writing becomes less taxing on the short-term memory (Wood, 2002). Nattinger and DeCarrico (1992) describe different lexical phrases like polywords that are phrases that cannot be manipulated as a unit like *for the most part*, expressions that are sentence length incorporating frequently occurring language like *how are you*, and sentence builders that provide support in constructing sentences with spaces for words to be filled in. These lexical phrases provide support for ELLs and native English speakers by identifying the formulaic language through reading or listening, adapting them for their use when writing or speaking, and analyzing and using them to integrate them into memory (Nattinger & DeCarrico, 1992). Through consistent interaction with the formulaic language and instruction on using appropriate

sequences based on the genre and task, students can see positive results in their fluency and mental processing (Nattinger & DeCarrico, 1992; Wray & Perkins, 2000).

Within more current research, there have been studies that integrate sentence frames within a larger intervention and studies that solely focused on the sentence frames. For example, in a study conducted by O'Hallaron (2014), genre-specific graphic organizers were used for argumentative writing to investigate the genre-related features students included within their writing. Although not the focus of their study, the students received sentence stems only for providing reasons. Their findings showed a shift in the ELLs' use of evidence from their own thoughts to providing evidence from the text and adding reasoning within their writing. Similarly, Kim et al. (2011) were interested in how teachers' participation in the professional development Pathway Project impacted the text-based writing outcomes of Latino ELLs. Within the professional development, teachers learned various cognitive strategies for instruction with ELLs, one of which was using sentence starters. Findings showed significant and positive effects on the Latino ELLs' writing for both on-demand writing tasks and the state writing test.

In studies that focused on using sentence frames to support ELLs, researchers found that students' writing improved through practice and use of the language within the frames. Furthermore, Block (2019) investigated using sentence frames to examine how they supported ELLs and native English speakers in incorporating science vocabulary into their writing and in vocabulary knowledge. The study showed that sentence frames supported the writing task by integrating more of the science vocabulary. Additionally, ELLs benefited more from the sentence frames than native English speakers. Tretter et al. (2014) also investigated the use of sentence frames within a science context; however, instead of focusing on science content vocabulary,

they looked at the effects on vocabulary and connecting words used in academic writing. Mortar vocabulary is essential for science because they help to explain the relationship between science concepts (Tretter et al., 2014). They found that the sentence frames supported the ELLs' performance on the mortar assessment but did not look at the effects within actual writing.

In addition to the research studies conducted on sentence frames, there are many articles, book chapters, and reports written on the importance of using sentence frames for ELLs to reduce linguistic challenges. For example, in an article written by Donnelly and Roe (2010), the process of including sentence frames within a content area lesson is explained by thinking about the vocabulary and language proficiency necessary to be successful in the lesson. In another article on the common core and English learners' writing, Olson et al. (2015) describe how sentence frames develop sentence complexity, the language needed to write, and can be used as a model for the varying language of different genres. In a report on teaching academic content and literacy to ELLs, Baker et al. (2014) describe language-based supports, like sentence frames, that can be used to help summarize and analyze content, make inferences, and articulate a clear message to their audience. Lastly, in a book chapter by Olson et al. (2013) on best practices in teaching writing to English learners, they describe the importance of scaffolding ELLs' writing through sentence frames ranging in complexity with word banks based on the needs of the English learners.

As shown by the research, sentence frames are beneficial language-based support for ELLs, especially when writing. However, for sentence frames to be effectively created and used within a classroom to support ELLs, a teacher must have strong pedagogical knowledge and skill on sentence frames. Therefore, I conducted an electronic database search within ERIC, Education

Source, and APA PsycInfo to locate empirical studies of qualitative and quantitative methods on how teacher preparation programs have provided instruction to preservice teachers on creating and using sentence frames for ELLs. I used following inclusion criteria for identifying the empirical studies: articles needed to be in English, peer-reviewed, access to the full text, and include teacher preparation as the context. In addition, I searched using terms frequently associated with teacher preparation and sentence frames such as *preservice teacher*, *prospective teacher*, *teacher preparation*, *sentence frames*, and *paragraph frames*. Of the results, there were no empirical studies that met the inclusion criteria of the search.

Due to the limited empirical research on how teacher educators can teach preservice teachers how to create and use sentence frames effectively with ELLs, the study at hand investigated one way to teach preservice teachers the pedagogical content knowledge and skill in creating and using sentence frames. A context that might support the preservice teachers' development of using sentence frames with ELLs is TeachLivE™. Next, I review the literature on mixed-reality simulations and, more specifically, TeachLivE™ to describe the affordances of the environment for teacher preparation.

### Mixed Reality Simulations and TeachLivE™

A mixed-reality simulation is a safe place where preservice teachers can practice what they have learned in their teacher education courses in a risk-free environment (Dieker et al., 2014; Murphy et al., 2018). Mixed-reality simulations are different from virtual environments in that virtual environments include pre-programmed responses and are not as authentic. Mixed-reality simulations utilize a human as an Interactor that controls what the avatars say and do (Murphy et

al., 2018). These simulations can be better ways to practice and improve teaching and other important skills in teacher education courses than that of activities like role-playing due to social desirability or the preservice teachers' lack of knowledge of how an elementary student or ELL may respond to a situation (Mullen et al., 2007; Murphy et al., 2018). However, to provide effective simulated experiences, careful planning around personalized learning, suspension of disbelief, and cyclical procedures are important (Dieker et al., 2014). By creating a suspension of disbelief, the simulation feels real even though preservice teachers realize they are not inside an actual classroom, a feeling that does not occur during role-playing (Hayes et al., 2013; Murphy et al., 2018).

Due to the design of mixed-reality simulations, preservice teachers can receive feedback in many ways. For one, preservice teachers are provided instant feedback on their teaching from the avatars in real-time. Additionally, preservice teachers can receive feedback from other peers and the instructor. Finally, a key feature of simulations is the ability to pause the simulation, so the preservice teacher and instructor can discuss a troublesome situation together and develop possible solutions (Murphy et al., 2018). It is from these affordances that I situated this study in the context of the mixed-reality simulation TeachLivE™.

### TeachLivE™

To more closely investigate research on TeachLivE™ as an approximation of practice for preservice teachers, I did a hand search of the TeachLivE™ publications listed on their website. The inclusion criteria I used to select articles included utilizing preservice or in-service teachers as participants, and it had to be an empirical study published in a refereed journal. Therefore, I

did not include conference presentations or papers. There were six articles that met the above criteria. After reading these articles, I noticed two were very similar, so I removed one of them, leaving five articles total (see Appendix A for a summary of the articles). I identified three major patterns from the five articles: (a) preservice teachers experienced growth in the focused teaching behavior, (b) some transfer of the focus behavior was seen in regular classrooms, and (c) the importance of feedback and reflection in addition to the simulation. Below I review the literature on TeachLivE™ simulations concerning these three patterns for both in-service and preservice teachers.

### *In-Service Teachers*

Researchers have investigated the effects of TeachLivE™ simulations on in-service teachers' use of focused behaviors in teaching and their transfer to regular classrooms. For example, in a study conducted by Dawson and Lignugaris (2017) on developing in-service special education teachers' skill in using specific praise and error correction, they found the teachers improved on the targeted behavior and transferred the learned skills into their classroom. However, the transfer was more substantial when situations were similar to the simulation. Dieker et al. (2019), in their study with secondary science teachers, found improvement in science discourse during instruction after four 10 minute sessions of TeachLivE™. This study provided unique results in that they found only teachers who received feedback improved their skills significantly in science discourse, whereas teachers who did not receive feedback did not. Similar results came from the Dieker et al. (2017) study with math teachers in that teachers who engaged in reflection after the simulation had changes in their eliciting and interpreting student math thinking as



compared to teachers who just engaged in the simulation without reflection after. Both of these studies found transfer of skills into the regular classroom, however, with varying levels of proficiency.

### *Preservice Teachers*

Additionally, there has been limited research on TeachLivE™ with preservice teachers. Battista and Boone (2015) investigated early childhood preservice teachers' science teaching self-efficacy beliefs after engaging in TeachLivE™ simulations. Their findings showed that preservice teachers' beliefs significantly increased from participating in the simulations. Kelley and Wenzel (2018), in their study of preservice teachers in a reading practicum, focused on the skill of conducting a parent-teacher conference. Most preservice teachers demonstrated skill in conducting a conference with a parent on their first try, with only 38% of their participants having to set a goal and complete another simulation. Kelley and Wenzel (2018) also gained feedback from the preservice teachers. They found that only a few students identified the TeachLivE™ simulation as a key instructional support, while most of the students felt the instructor feedback was more critical. Interestingly, it was because of the environment of the TeachLivE™ simulation that the instructors were able to provide feedback to the preservice teachers.

Some research uncovered the impact of TeachLivE™ on preservice teachers' skills related to specific behaviors, including findings that demonstrate the importance of feedback or reflection. I add to this literature by focusing on using sentence frames with ELLs and investigating how reflection before, during, and after the simulation supports preservice teachers' learning. The

following section includes a review of the literature on the use of reflection in teacher preparation and how my study adds to this literature.

### Reflection

In order to develop teachers who are reflective practitioners (Schon, 1983), we must provide support in teaching preservice teachers how to engage in reflection. Reflection is a process of which begins with a feeling of uncertainty and is followed by identifying what the problem is, using knowledge and past experiences to come up with possible solutions to the problem, and engaging in further experiments to determine if the possible solution selected resulted in solving the problem or if another possibility needs to be tried (Dewey, 2018). This reflective process can play a crucial role in supporting preservice teachers in using sentence frames with ELLs as they analyze problems that occur during their lesson to identify solutions and try them out in action. However, preservice teachers need support in reflecting on their practice because they are novices in the profession of education and do not have the expert knowledge or range of experiences that a professional teacher has. A more knowledgeable other, like a teacher educator, can provide the support necessary for preservice teachers to reflect on their teaching in a way that develops professional understanding. Reflection can occur before teaching through reflection-for-action, during teaching through reflection-in-action, and after teaching through reflection-on-action (van Manen, 2015). In the paragraphs that follow, I describe each of these forms of reflection. To learn more about how I integrated them within the reflective process of this study, see Chapter Three.

### Reflection-For-Action

Reflection-for-action involves envisioning how the lesson will go and brainstorming the challenges and consequences of what is planned (van Manen, 2015). Typically, in teacher education, reflection-for-action occurs through a relatively short pre-conference and occurs as close as possible to the actual teaching (Wetzel et al., 2017). The purpose of a pre-conference is not to engage in planning or rethinking a part of the lesson (Wetzel et al., 2017); instead, it is the time for the preservice teacher to develop a mental image of what their teaching might look like.

### Reflection-In-Action

Reflection-in-action is the in-the-moment thoughts that occur during teaching. As a teacher is confronted with situations, they make decisions at the spur of a moment based on past experiences and knowledge. Within teacher education, reflection-in-action can be a challenge as there is little time to jointly reflect in a real classroom setting. Many times supervising teachers or mentors provide feedback through an earpiece (Stahl et al., 2018) or during the short periods when students are working amongst themselves (del Rosario, 2017). The problem with supporting preservice teachers in reflecting-in-action within a classroom is that there is only time for feedback and not reflection. This is why many teacher educators use virtual simulations with preservice teachers. During a simulation, the classroom can be “paused,” and the teacher educator and preservice teacher can take as much time as needed to jointly reflect on the problem situation and possible solutions (Dotger, 2015; Driver et al., 2018; Thompson et al., 2019).

### Reflection-On-Action

Reflection-on-action consists of revisiting the teaching after it has occurred to form new understandings about practice (van Manen, 2015). In teacher education, this occurs during a post-conference where the teacher educator and preservice teacher reflect on the teaching. These conversations must not become evaluative with judgment and praise (Wetzel et al., 2017). During the post-conference, everything from the pre-conference and the reflection that occurred during teaching is tied together to develop a professional understanding of teaching. Through these professional understandings, preservice teachers can expand their understanding of using sentence frames with ELLs and can apply what they learned to future situations in which they are using sentence frames to support ELLs.

To conclude this chapter, I describe my findings from a literature review on the use of reflection in teacher preparation. The following questions guided this review: (1) In what ways is reflection used within elementary teacher preparation courses? (2) How do teacher educators teach preservice teachers about sentence frames? (3) How do teacher educators use TeachLivE™ within teacher preparation?

### Inclusion Criteria

I conducted an electronic database search within the Education Resources Information Center (ERIC) to locate empirical studies of qualitative and quantitative methods. I used the following inclusion criteria to identifying the empirical studies: articles needed to be in English; published between 2010 and 2020; peer-reviewed; include elementary undergraduate preservice teachers, and utilize reflection within a type of field experience or approximation in person or virtually.

Therefore, I omitted research articles focused on secondary preservice teachers, graduate preservice teachers, and reflection on coursework or rehearsals.

### Procedures

I first conducted an electronic database search within ERIC using terms frequently associated with reflection, teacher education, and English Language Learning such as *reflect*, *reflection-for-action*, *preservice teacher*, *prospective teacher*, *teacher preparation*, *approximation of practice*, *field experience*, *English Language Learner*, and *English as a second language*. This initial search resulted in two articles. After reading the abstract of each, only one article met my criteria. I documented the article and then removed the search criteria related to ELLs because I conducted a separate search on teaching preservice teachers about using sentence frames as described earlier in this chapter. When I searched again, it resulted in 154 matches. I then read the abstract of each article, or if needed, the research design to ensure each of my criteria was met. The total number of articles that met all my inclusion and exclusion criteria was 41.

The final step in the review process included hand-searching the table of contents and reading the abstracts of promising articles within the journal *Reflective Practice* from 2010 to 2020. This hand search yielded an additional six articles.

Of the 47 articles identified in the review, five were most aligned with the current study; the other 42 articles utilized reflection as a written artifact, reflection with peers, or reflection as a secondary data source (see Appendix B for a summary of the articles). Thus, I summarize the literature that utilizes reflection as a written artifact and then dive deeper into the research that

included reflection as a process. I then articulate how this study is situated within the literature and how it extends it.

### Reflection as a Written Artifact

Of the articles located in the search, 32 utilized reflection as a written artifact in which preservice teachers reflected on their experiences, their teaching, or their beliefs. None of the articles that utilized reflection as a written artifact included reflection-for-action or reflection-in-action. Although one article, Davis et al. (2019), had the preservice teachers reflect-on-action focusing on their planning and in-the-moment decisions after the teaching took place. The other patterns that emerged through the synthesis of the literature were the teacher educators' use of unstructured written reflections, the teacher educators' use of guiding questions or prompts for written reflections, the preservice teachers' writing about the experiences that occurred within a field experience, and the preservice teachers' writing about their teaching within a field experience. Below, I describe each of these patterns in more detail.

#### *Unstructured Written Reflections*

A small portion of studies utilized unstructured written reflections in which the preservice teachers were free to reflect on any component of the field experience they liked. All of the studies in this group had preservice teachers write their reflections individually. One study, Hallman-Thrasher (2017), had the preservice teachers read and comment on their peers' written reflections after their individual written reflections were submitted.

## Experiences and beliefs

The majority of the unstructured written reflections were on the experiences and beliefs of the preservice teachers. For example, when reflecting on the experiences of a field placement, many preservice teachers wrote about the advantages or positive experiences and the disadvantages or challenges they faced (Al-Hassan et al., 2012; Har, 2011; Paquette & Laverick, 2017; Tsybulsky & Oz, 2019). In addition to reflecting on the challenges and successes of a field experience, three articles included reflections from preservice teachers in which they wrote about the experiences of learning to teach, utilizing a tool for teaching, or teaching diverse students (Arrequin-Anderson & Ruiz-Escalante, 2018; Guillory, 2012; Hoffman et al., 2018). Of particular importance to this study is Guillory's (2012) study, in which preservice teachers reflected on their experiences tutoring diverse students and what they learned about themselves. He found that preservice teachers had perceptions and fears of teaching students of other cultures and languages, but the field experience changed these assumptions and feelings. Lastly, some of the written reflections focused on the beliefs of preservice teachers (Haberlin et al., 2019; Wetzel et al., 2016). Although all of these studies utilized written reflection as the primary data source to their study, debriefing or feedback with a teacher educator or supervising teacher was included; however, the studies did not provide further details on these situations.

## Teaching

A much smaller number of the studies that used unstructured written reflections included preservice teachers reflecting specifically on their teaching (Hallman-Thrasher, 2017). Three of the articles included reflections that identified the challenges that occurred during teaching (Buck

et al., 2010; Hallman-Thrasher, 2017; Yoon et al., 2012), while two other studies written reflections focused on the teaching decisions of the preservice teachers (Arrequin-Anderson & Allanis, 2017; Schneider et al., 2012). For example, in the study conducted by Arrequin-Anderson and Allanis (2017), the preservice teachers reflected on the structured and semi-structured strategies they used during their 5E science lesson plan. The most popular semi-structured strategy used by the preservice teachers was the use of sentence frames. Interestingly, Schneider et al. (2012), in their study on the teaching decisions of the preservice teachers, found that requiring reflection as a course assignment was unlikely to cause reflective practice. This has important implications for this study as rather than having a written reflective assignment, I utilized joint reflection through interactions with a teacher educator in hopes of engaging the types of reflection that Dewey (2018) and Schon (1983) describe.

### *Guided Written Reflections*

Additionally, 18 studies utilized guiding questions or prompts to help focus and support the preservice teachers as they wrote written reflections on their field experiences. Like the unstructured written reflections, all of the preservice teachers reflected individually, and in two studies, they responded to another peer's reflection or had debriefing of some sort (Parker et al., 2012; Parker et al., 2014). Nesmith (2011) investigated the use of guiding questions on the preservice teachers' reflections. They found that the skilled construction of guiding questions supported the preservice teachers to reflect across varying levels of depth. Interestingly, there were significantly more reflections related to teaching when they provided prompts or guiding



questions. This makes sense as the prompts act as a scaffold or a guide to support the preservice teachers as they wrote.

### Experiences and beliefs

Of the 18 studies, 9 utilized guided questions as prompts to support the preservice teachers as they reflected on their experiences teaching in a field placement. Two studies focused on the experiences and beliefs of the preservice teachers in relation to co-teaching and teaching students with disabilities (Parker et al., 2012; Parker et al., 2014). White (2017) and Kinskey (2018) had preservice teachers reflect on what they learned about themselves as teachers and the value of the field experience. Additionally, Brown and Moyer-Packenham (2012) included reflections in which the preservice teachers discussed the preparation and attributes of math teaching and classrooms. Intriguingly, two studies provided prompts that were in place to focus the preservice teachers' reflections on their teaching; however, the reflections resulted in discussion on beliefs and issues unrelated to teaching (Purnomo et al., 2016; Seung et al., 2014). This is a significant finding for my study as it shows that preservice teachers might need more support than prompts to reflect on the quality of their teaching and not just their experiences and beliefs. Also related to my study were two articles on the preservice teachers' written reflections on culturally responsive teaching and cultural competency (Bennett, 2013; Kondor et al., 2019). My study adds to this literature by focusing on the reflection of the teaching of diverse students rather than just the experiences.

## Teaching

The other half of the studies used prompts or guiding questions focused on reflection related to the preservice teachers' teaching. Two studies asked preservice teachers to reflect on their decisions as they were teaching (Davis et al., 2019; Nesmith, 2011). The rest of the articles focused on the lesson as a whole in regards to topics including what they learned about teaching, what worked in their lesson, what did not work, the changes they would make, and the strategies they used (Harding & Hbaci, 2015; Hudson et al., 2019; Kurz & Kokic, 2011; Shelton et al., 2020; Töman, 2017; Webster et al., 2019; Yu, 2016). Hudson et al. (2019) engaged preservice teachers in three five-minute mixed-reality simulations on classroom management. Although the preservice teachers reflected on their teaching, they also reflected on the benefits of practicing with avatars prior to managing a real classroom and the value of the experience. This directly relates to the study at hand, as the preservice teachers used TeachLivE™, a mixed-reality simulator, to practice using sentence frames with ELLs. My research adds to this study how joint reflection with a teacher educator might support the preservice teachers' pedagogical skill in using sentence frames with ELLs.

## Reflection as a Process

Unlike the articles above, 15 articles utilized reflection as a process in which preservice teachers reflected through conversations with peers and/or a more knowledgeable other. I begin this section of the review with the articles that utilized reflective conversations but were not the central part of the study or did not describe what these conversations consisted of. I then shift into the articles that align more with this study by including the reflective process as the focus of

the research. Finally, I conclude this section with how my study contributes to the research in the field.

### *Reflection as a Secondary Source*

Reflective conversations amongst peers and/or a more knowledgeable other were incorporated into six of the research studies; however, they did not provide information on these conversations, or the reflective process was not the focus of analysis. For example, Malandrakis (2018) used reflective discussions, but they did not describe what the discussions were about or how they took place. Additionally, the focus of their study was the results of the Science Teaching Efficacy Beliefs Instrument to learn more information about the preservice teachers' self-efficacy in relation to science teaching. Interestingly enough, reflection was the second factor that impacted the preservice teachers' self-efficacy. Similarly, Chien (2015) had preservice teachers and expert teachers engage in reflection before their teaching by having conversations around the preservice teachers' lesson plans and changes that may need to be made. They then debriefed after the teaching, and the preservice teacher wrote reflections on the mentoring experience. The focus of the analysis of this study was then on the written reflections in relation to the mentoring experience and not the actual interactions that took place around their teaching. On the other hand, Malewski et al. (2012) utilized debriefing sessions, but the sessions were about the experiences of the international field placement and were not related to their actual teaching of the diverse students. Lastly, three articles utilized reflection with peers in which they analyzed and critiqued one another's lessons and suggested possible alternatives for improvements (Ajayi, 2014; Branscombe & Schneider, 2013; Loman et al., 2020). The problem

with having preservice teachers reflect with one another is that they do not have the range of experiences and expert pedagogical knowledge to reach the high level of Dewey's (2018) and Schon's (1983) reflection. This issue is especially evident in the Loman et al. (2020) study in which the preservice teachers struggled to provide one another objective feedback in relation to their teaching. Researchers found it was easier for the preservice teachers to discuss the classroom management of the preservice teacher in their post conferences.

### *Reflection as an Interaction*

The rest of the articles focused on the reflective interactions taking place either as a group with other preservice teachers and the more knowledgeable other or as a pair with a preservice teacher and more knowledgeable other (Vygotsky, 1978).

### *Reflection with a Group*

When the reflective interactions included a group of preservice teachers and the more knowledgeable other, the focus became on the peers' interaction and not how the more knowledgeable other supported the reflection (Carter et al., 2016; William, 2020). For example, in the Carter et al. (2016) study, the preservice teachers and university coordinator reflected on their ability to interpret student thinking. Although the reflective interactions improved the preservice teachers' skill in interpreting student thinking, their revised lesson plans and individual reflections did not include the information reflected on in the group meetings. Additionally, the study conducted by William (2020) utilized video-stimulated reflection with peers and a teacher educator, however, the teacher educator was not as involved in the conversations. Findings from this study showed that although the preservice teachers could

frame the problem of a situation and reframe the situation, they did not achieve a resolution. From the results of these studies not moving the preservice teachers through reflection, one might wonder if the results would change by having the teacher educator take a more active role in the reflective conversations. For example, Saiz-Linares & Susinos-Rada (2020) emphasized the need for the more knowledgeable other to provide support and guidance in the reflective process to provide structure to the reflection. These authors also incorporated both individual written reflections and collaborative reflection with other preservice teachers and the supervisor. They found that the collaborative reflection transformed the reflection the most. Prado et al. (2019) further analyzed how the more knowledgeable other could use strategies to enhance the quality of joint reflection based on moves or patterns. They found that the preservice teachers contributed mainly with possible solutions to resolve a problem situation being analyzed through their knowledge from their apprenticeship of observation and the more knowledgeable other provided clarification to the situation and dialogic assistance. Like Prado et al. (2019), I investigated how I, as a more knowledgeable other, enhanced a preservice teacher's ability to reflect. My study is different and adds to the literature in that I engaged in these conversations one-on-one with a preservice teacher and not among a larger group.

### Reflection as a Pair with a More Knowledgeable Other

Although some researchers chose to look at reflection as an interaction amongst a larger group, others developed their studies to engage in reflection one-on-one with a preservice teacher. Three studies engaged in reflection-on-action, two of which used video-mediated reflection (Haugan et al., 2013; Sagasta & Pedrosa, 2019; Vesterinen et al., 2014). Sagasta and

Pedrosa (2019) found that through the joint reflection on the preservice teacher's video-recorded lesson, most of the reflection included a dialogic approach in which they thought about the students' perspectives and their opportunities to learn. Fewer teachers reflected solely on the outcomes of their lesson or a routine. Although evidence showed that preservice teachers did engage in reflection, the role the more knowledgeable other played in supporting this type of reflection or how it was supported is unknown. In the study by Vesterinen et al. (2014), the preservice teachers were able to shift their reflection from the more visible elements of their teaching to the underlying, less visible factors, but faced several challenges, especially understanding the fine detail of their actions when teaching.

Wetzel et al. (2017) offer a unique look into reflection in their study as they investigated reflection-for-action and reflection-on-action and the moves used to co-construct knowledge around practice. During a pre-conference, the mentor and preservice teacher reflected-for-action in which they identified the goals of the lesson, articulated what was expected to occur, and the challenges that the students might face. During the post-conference, they then reflected-on-action in which they recalled specific moments, discussed the surprises or challenges, and made a plan for future teaching. Although the mentor found success in helping the preservice teacher notice particular instances through student work and talk, she faced challenges in maintaining the conversation around reflection on teaching and not an evaluation through using judgment and praise.

To provide information on reflection-in-action and reflection-on-action, del Rosario (2017) investigated how bilingual preservice teachers led math discussions with a diverse group of fifth graders. Live coaching and reflection supported the preservice teachers in relation to gaining

confidence in using academic language and attending to power and privilege. Most often, the coach would whisper to the preservice teacher as the students were turning and talking or working on something in order to engage in a brief conference on what happened and where they were going next in relation to pacing, asking students questions, and increasing the engagement of students who were lower academically.

Notably, one can conclude that this review of the literature on the use of reflection in preservice teacher education shows that many of the studies utilized reflection as a written artifact and focused on reflecting-on-action. This resulted in reflection from preservice teachers that concentrated on their experiences. The current study, adds to the literature by exploring reflection as a process in which a more knowledgeable other and preservice teacher jointly reflect-for-action, reflect-in-action, and reflect-on-action. I identified no studies that investigated all three as a reflective unit.

Although the process of joint reflection is the major piece to this study, it is important to note that the subject or content of the reflection and the context in which the reflection is occurring is important to the reflective process. Regarding this study, the content of the joint reflection was the preservice teacher's use of sentence frames with English Language Learners, and the context is the virtual environment TeachLivE™.

### Summary

This chapter reviewed the literature on sentence frames and demonstrated the gap in the research literature on providing instruction on the creation and use of sentence frames with preservice teachers. I then provided a review of the literature on mixed-reality simulations and

their use in teacher preparation with a focus on TeachLivE™ to demonstrate the settings affordances for developing preservice teachers' pedagogy on targeted skills. Last, I described the literature on reflection and how this practice has been used in teacher preparation to describe how my study adds to this literature. In the next chapter, I articulate the guiding theoretical frameworks and the methods of the current study.



## **CHAPTER THREE: THEORETICAL FRAMES AND METHODS**

This chapter aims to describe the two theoretical frameworks of this study and how they guided the research design. I start the chapter by explaining the two theoretical frameworks: reflection and constructionism, and how they align with this study. I then go into detail on the research design and methods of this study.

### Theoretical Frameworks

#### Reflection

It is widely understood that a goal of teacher education is to develop preservice teachers who are what Donald Schon (1983) would call reflective practitioners (Loughran, 2002). A reflective practitioner is one who "...allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomena before him, and on the prior understandings which have been implicit in his behavior. He carries out an experiment which serves to generate both a new understanding of the phenomena and a change in the situation" (Schon, 1983, p. 68). In order to be a reflective practitioner, one must: (a) be an expert in teaching, (b) have a variety of experiences to apply to any situation that is uncertain with the intention of better understanding the situation and how to make sense of it, and (c) generate a new understanding through experimentation (Schon, 1983).

The idea of being a reflective practitioner is problematic with preservice teachers because they are not professionals or experts in the field of education but rather novices. Therefore, they do not have the range of experiences and knowledge that a professional teacher has to apply to

situations of confusion. As Schon (1983) showed in the examples of the architecture design student and the resident in psychiatry, when faced with a situation of confusion, the student did not have the prior understanding from knowledge or experience to experiment and make sense of the situation. Instead, they needed the support of a more knowledgeable other (Vygotsky, 1986), their supervisors, to decipher the situation and develop an understanding.

When practitioners reflect on what they are doing as they teach, they are engaged in reflection-in-action (Schon, 1983; van Manen, 2015). Reflection-in-action is stimulated through the experience of uncertainty and “tends to focus interactively on the outcomes of action, the action itself, and the intuitive knowing implicit in the action” (Schon, 1983, p. 56). The amount of time a professional has to identify possible actions and their outcomes to solve the uncertainty during reflection-in-action is not the same for all situations. The timing depends on the pace of the activity and at what point an action would no longer impact the situation (Schon, 1983). The pace of teaching is rapid; teachers typically have seconds to reflect-in-action as the classroom environment and situations are ever-evolving.

When teaching preservice teachers how to reflect-in-action, the pace at which situations occur during teaching provides a significant challenge. Pausing the interactions in a classroom to give the preservice teacher time to revisit the action that occurred, its outcome, and the varying ways to best move forward would be difficult (van Manen, 1991). Then, to have the time necessary for a more knowledgeable other to engage in joint reflection with the preservice teacher to provide support through experience and knowledge to guide the preservice teacher in their reflection would not be possible. To overcome the obstacle of time for preservice teachers to reflect-in-action, Schon explains the importance of virtual worlds (Schon, 1983). Virtual

worlds “are contexts for experiments within which practitioners can suspend or control some of the everyday impediments to rigorous reflection-in-action. They are representative worlds of practice in the double sense of “practice”. And practice in the construction, maintenance, and use of virtual worlds develops the capacity for reflection-in-action which we call artistry” (Schon, 1983, p. 162).

However, few empirical studies have investigated the use of virtual reality simulated approximations of practice (Chazan et al., 2018). One virtual world created to develop both preservice and in-service teachers’ pedagogical skill is TeachLivE™ (Dieker et al., 2017; Driver et al., 2018; Thompson et al., 2019). TeachLivE™ is a mixed reality classroom with simulated students that are avatars consisting of a range of ages and students with disabilities and English Language Learners (TLE TeachLivE™, 2020). In this virtual world, the preservice teacher and teacher educator can pause the simulation during experiences of surprise to create the needed time to engage in joint reflection-in-action. TeachLivE™ also provides the affordance of trying out the preservice teacher’s ideas to see if they lead to the desired outcome. Within this study, TeachLivE™ provided the environment in which I supported preservice teachers as they practiced using sentence frames to support English Language Learners’ (ELLs’) writing. Chapter Three further describes TeachLivE™ as the context for this study.

So far, the literature provides evidence of the degree of sophistication needed to be a reflective practitioner and to reflect-in-action. I have also shown the challenges that arise when faced with supporting preservice teachers to become reflective practitioners. I now draw upon the writing of John Dewey (2018) to further demonstrate the complexity of reflection as well as that of Vygotsky (1986) to articulate more clearly the need for a more knowledgeable other.

Reflection, as Dewey states, is an “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of grounds that support it, and the further conclusions to which it tends” (Dewey, 2018, p. 8). As mentioned, preservice teachers do not always have the knowledge and experiences needed to carefully consider and create further conclusions that Dewey speaks of in the above definition of reflection. Therefore, a more knowledgeable other, like a teacher educator, is needed to assist the preservice teacher in the process (Gelfuso & Dennis, 2014; Kazemi et al., 2016; Schutz et al., 2019; Thompson et al., 2019). With the assistance of the teacher educator, the preservice teacher can develop their content knowledge and skill in reflection to successfully reflect with peers or other material in the future (Vygotsky, 1986). Learning the process of reflection is important as the teacher educator provides scaffolds for the complex process. Once a preservice teacher can engage in the process of reflection, it is then that the teacher educator can be replaced by other resources, like books, to provide support for the content reflected upon.

Dewey (2018) further explains the process of reflection as having two main elements. First, in order to begin reflecting, a feeling of dissonance must occur. Dissonance is a feeling of hesitation or doubt followed by an attempt to search for information that could clear up the initial doubt (Dewey, 2018). Without a feeling of uncertainty, one would continue the action engaged in as nothing prompted them to alter their course of action. The notion of dissonance is troublesome with preservice teachers because they do not always notice when something unplanned or unique occurs in the given situation (Gelfuso, 2016). To support the preservice teacher in noticing moments of doubt during their teaching, I propose it may be beneficial for the preservice teacher to articulate what they expect to happen during their lesson prior to the actual

teaching. Having this clear expectation of their teaching will support the preservice teacher in noticing more clearly when something unexpected occurs. In order to set up the above conditions, I suggest the preservice teacher and teacher educator engage in joint reflection-for-action before enacting the lesson. During reflection-for-action, the preservice teacher is able to describe what they expect to happen as they engage in teaching. Then, by establishing what the preservice teacher expects to happen during their lesson, they can notice a point of dissonance when something they expected to happen does not occur.

After this feeling of dissonance, a person seeks an alternate course by identifying the problem at hand and searching for information within the action itself and from previous experiences to develop possible solutions. From the possible solutions identified, it is then that further experiments can be carried out.

While seeking an alternate course, one must have good judgment to select the most plausible explanations. According to Dewey (2018), to encompass good judgment, one must “have a sense of the relative indicative or signifying values of the various features of the perplexing situation” (Dewey, 2018, p. 92). This means one must understand of what ideas to let go of and the ideas that should be held on to while identifying possible solutions.

Engaging in analysis is no easy feat. Preservice teachers do not have the professional knowledge or repertoire of experiences to successfully engage in analysis that an experienced teacher would have. Especially in education, many of the experiences preservice teachers have come from their apprenticeship of observation (Lortie, 1975). Preservice teachers enter teacher education programs with years of observing instruction and developing their beliefs of what teaching is. Some of these beliefs may be (mis)understandings of teaching that the preservice

teacher holds true and might be used as they reflect (Gelfuso, 2018). For these reasons, preservice teachers need a more knowledgeable other to support them in skillfully placing emphasis on what is important and ignoring the information that is not of importance. Through joint reflection, the more knowledgeable other provides the insight, knowledge, and experience to develop the preservice teachers' professional knowledge to ensure they use sound judgment they search for information within the experience to identify the problem, continue to search for information from past experiences and content knowledge to identify why the problem occurred, and then use the information to determine what can be done to solve the problem. Vygotsky further emphasizes the importance of analysis in developing understandings when he states, "Our experimental study proved that it is a functional use of the word, or any other sign, as means of focusing one's attention, selecting distinctive features and analyzing and synthesizing them, that plays a central role in concept formation." (Vygotsky, 1986, p. 106). When applying the idea of concept formation to preservice teachers, it is through the analysis process I described above and the synthesis process that is described in the next paragraph that a preservice teacher begins to develop a professional understanding of terminology, or concepts, of teaching. However, Vygotsky argues that the communication and interaction of the adult, or more knowledgeable other, is of key importance as one develops concepts (Vygotsky, 1986). Although Vygotsky explicitly talks about a child's development of a concept, any time a human is learning something new, it is as if one is entering with new eyes. Therefore, I believe Vygotsky's idea of concept formation can be applied to a new concept that a preservice teacher is learning about teaching.

Reflection does not stop after analysis. After the initial dissonance is solved, one must place or synthesize the experience to walk away with a professional understanding of the situation to use in the future. Judgment, therefore, is both analytic and synthetic (Dewey, 2018). Vygotsky further articulates the need for both analysis and synthesis in forming concepts, or professional understandings in teaching when he says, “To form such a concept it is also necessary to abstract, to single out elements, and to view the abstracted elements apart from the totality of the concrete experience in which they are embedded. In genuine concept formation, it is equally important to unite and to separate: Synthesis and analysis presuppose each other as inhalation presupposes exhalation (Goethe)” (Vygotsky, 1986, p. 135). When Vygotsky establishes the need to abstract and single out elements, he describes the process of analysis in which features of the situation are analyzed to determine their significance to the situation. Synthesizing is then the process in which what one has learned is thought about in other situations or “apart from the totality of the concrete experience in which that are embedded” (Vygotsky, 1986, p. 135). This process of synthesizing develops a professional understanding that is no longer specific to the unique situation that occurred, but rather generalizable to future similar situations. To apply this to preservice teachers, a professional understanding is a concept formation of what the preservice teacher learned about teaching or learning from their engagement in reflection that they are walking away with and can use in the future. For example, a preservice teacher may create the professional understanding that word banks, in addition to sentence frames, provide the language support necessary for beginner-level ELLs. By generalizing a professional understanding, a preservice teacher can apply the concept to other situations to solve new problems.

## Constructionism

If reflection is indeed a process, as described above, between a preservice teacher and teacher educator, it is then the social interaction between the two during the reflective process that creates meaning. Constructionism is just that. Constructionism explains that knowledge is developed in a social context, like within TeachLivE™ during joint reflection, and therefore meaning emerges through interacting with other humans, like the interaction of the preservice teacher and teacher educator, or the surrounding world (Crotty, 2015). In this study, the meaning that emerges is related to skillfully using sentence frames with ELLs. Furthermore, Van Manen (2015) explains, “it is often in conversation with another person that we are best able to reflect on the meaning of a particular situation” (p. 116).

Within the literature, constructivism and constructionism are sometimes used interchangeably (Gergen & Gergen, 2008). Michael Crotty (2015) distinguishes between constructionism and constructivism in which he states to “reserve the term constructivism for epistemological considerations focusing exclusively on the ‘meaning-making activity on the individual mind’ and to use constructionism where the focus includes ‘the collective generation [and transmission] of meaning’.” Gergen and Gergen (2008) reiterate this distinction when they establish constructivism as the individual’s cognitive process. As the preservice teacher is jointly reflecting with the teacher educator and not reflecting on their own, this study aligns with constructionism.

The purpose of research informed by constructionist epistemology is to learn how knowledge is socially constructed among people in society. Meaning, therefore, does not develop until one consciously interacts with other humans or the world (Crotty, 2015). From a constructionist



viewpoint, because meaning is socially constructed, there is not a true interpretation or meaning of something. By utilizing a constructionist epistemology, researchers can investigate the social forms produced through interactions and discourse (Gubrium & Holstein, 2008). Interactional constructionism is focused on the “discourse in practice” to show how social reality changes through human interaction (Marvasti, 2008). Just as constructionism dismisses the individualistic interpretations of reality, interactional constructionism investigates the action directed towards others within a social context rather than the individual’s intentions behind the action (Marvasti, 2008). Research that aligns with a constructionist epistemology typically focuses on what is constructed and the process of construction by highlighting key components of an unknown experience (Gubrium & Holstein, 2008). To explore the social action or key components, a researcher analyzes the text and talk of the interaction to determine how meaning is constructed (Nikander, 2008). For this study, I investigated how I, as a teacher educator, support preservice teachers’ “active consideration” through joint reflection so the preservice teacher can create “further conclusions” and walk away with a professional understanding on using sentence frames to support ELLs’ writing for future experiences. In Chapter Three, I further articulate how my constructionist epistemology aligns with the theoretical frame, research design, and methods of this study.

Many empirical studies have examined reflection-on-action (Gelfuso, 2016; Gelfuso & Dennis, 2014; Jao et al., 2020; Sagasta & Pedrosa, 2019; Thompson et al., 2019). However, there are no empirical studies to date that have investigated reflection as a total unit consisting of reflection-for-action, reflection-in-action, and reflection-on-action. Therefore, for this study, I

use the following definitions of reflection-for-action, reflection-in-action, and reflection-on-action.

*Reflection-for-action*, or anticipatory reflection, is defined as reflection “to deliberate about possible alternatives, decide on courses of action, plan the kinds of things we need to do, and anticipate the experiences we and others may have as a result of expected events or of our planned actions” (van Manen, 2015, p. 101). During reflection-for-action, a preservice teacher and a teacher educator jointly reflect to describe what they expect to happen as they engage in teaching. Establishing what the preservice teacher expects to happen, might help highlight the point of dissonance when something they expected to happen during their lesson does not. When something uncertain occurs, the preservice teacher and teacher educator then jointly engage in *reflection-in-action* “to come to terms with the situation or problem with which we are immediately confronted. This stop-and-think type of reflection permits us to make decisions virtually on the spur of the moment” (van Manen, 2015, p. 101). Once the moment of dissonance is noticed, the teacher educator and preservice teacher jointly search for material within the experience to identify the problem, search for material from coursework and past experiences to continue to identify why the problem occurred, and then based on the material, come up with possible solutions to try. After the lesson, the teacher educator and preservice teacher engage in *reflection-on-action*, or recollective reflection, “to make sense of past experiences and thus gain insights into the meaning of the experience we have with children. As a result of recollective reflection we may become more experienced practitioners as teachers or parents because our lives have been enriched by the reflective experiences that offered us new or deeper understanding” (van Manen, 2015, p. 101). As the reflective unit comes to a close, the teacher

educator and preservice teacher interact on what started the moment of reflection, the interactions that occurred after identifying the problem, and what was done to solve it to create a professional understanding for future situations.

Thinking of reflection as a unit of the three might support preservice teachers to engage in the type of reflection that Dewey (2018) writes about. This unit of reflection maintains the momentum of the reflective process that leads to the preservice teacher achieving the key part of reflection-on-action, the professional understanding.

It is essential to the field of teacher education that educators better understand how to support preservice teachers to develop a repertoire of professional understandings because it allows one to become what Schon (1983) calls a reflective practitioner. When one becomes a reflective practitioner, a more knowledgeable other, like the teacher educator, is no longer needed. In addition, it is these professional understandings that develop the preservice teachers' pedagogical tact. As van Manen (2015), states "Pedagogical thoughtfulness and tact are the mindful skills that enable a teacher to act improvisationally in always-changing educational situations" (p. 187). This is the goal of teacher education.

### Methods

The purpose of the rest of this chapter is to introduce the research methodology for this qualitative, action research study regarding how a teacher educator and preservice teachers engage in joint reflection-for-action, reflection-in-action, and reflection-on-action to develop preservice teachers' pedagogical skill in using sentence frames to support ELLs' writing. This chapter includes a description of the: (a) research design, (b) research question, (c) participants,

(d) researcher positionality and role of the researcher (e) data collection procedures, (f) data analysis, (g) trustworthiness, and (h) ethical concerns.

### Research Question

This study seeks to answer the following research question:

**RQ1:** How do a teacher educator and elementary preservice teachers engage in joint reflection during an approximation of practice in a TeachLivE™ setting to develop a professional understanding of using sentence frames to support ELLs' writing?

### Research Site

This study took place at a large, Southeastern university within the Micro-credentialing of English Learner Teaching Skills (MELTS) project. The MELTS project has 10 different modules that teach various skills to preservice teachers on research-based instructional practices for ELLs. This study focused on skill seven, using sentence frames to scaffold ELLs' writing which is an assignment in the LAE 4314 course titled *Language Arts in the Elementary School*. Within the skill seven module, the study focused on the TeachLivE™ session. Below more information on the MELTS module and the TeachLivE™ approximation of practice session is provided.

### *MELTS Module*

The skill seven module on using sentence frames to support ELLs' writing is designed to be self-paced and completed independently online. It consists of three major sections: digest, videos, and skill practice. Within the digest section of the module, preservice teachers read about a) creating appropriate sentence frames based on an ELL's proficiency level and need of the

lesson and b) using academic sentence frames to scaffold ELLs' writing before, during, and after content instruction. After reading about creating and using sentence frames, preservice teachers take a six-question multiple-choice and true or false quiz based on the material they read. After successfully passing the digest quiz, the preservice teachers watch two videos to observe an expert teacher using sentence frames in a small group with ELLs of varying proficiency levels. By watching the videos, the preservice teachers learn how to differentiate sentence frames based on the student's proficiency level, model the language of the sentence frames, use images and gestures to show the meaning of the vocabulary, and provide positive, constructive feedback to ELLs' writing. After viewing both videos, the preservice teachers then complete a 10 question multiple-choice and true or false quiz. The last component, skill practice, requires the preservice teacher to select a writing prompt and create three to five sentence frames for ELLs at a level one and three proficiency level. The preservice teachers then use the sentence frames during a TeachLivE™ session in which they scaffold virtual avatars to write a paragraph related to the topic as a class and receive coaching and feedback from two coaches that are viewing the lesson. TeachLivE™ is described further below. After the TeachLivE™ session, the preservice teachers complete a written reflection in which they write one to two paragraphs about their reaction to the practice experience and if the videos helped prepare for their practice session. Although the TeachLivE™ skill practice is mandatory for completing the assignment, the performance of the preservice teacher is not graded.

### *TeachLivE™ Session*

TLE TeachLivE™ is a mixed-reality simulation classroom with virtual avatars as students. The simulated environment supports preservice and in-service teachers as they develop their pedagogical skill in a safe environment that does not place real students at risk (TLE TeachLivE™, 2020). TeachLivE™ offers a variety of experiences based on how the instructor sets up the simulation. There are various age levels to choose from, including kindergarten, middle school, high school, university, and adult. Additionally, the instructor can design the simulation to include a range of behaviors from no challenging behaviors to extreme and intense behaviors.

Prior to a TeachLivE™ session, the preservice teacher develops a lesson plan and sets goals for their learning. During a TeachLivE™ session, the preservice teacher starts the classroom and interacts with the avatars by moving around the virtual classroom and work individually with avatars based on their teaching needs. With the support of an interactor, the avatars can respond verbally and physically to the preservice teacher; however, they cannot physically move around. After a TeachLivE™ session, students can restart the simulation if they did not achieve their goals or if they would like to retry their lesson.

The TeachLivE™ environment provides many affordances over a regular classroom when working with preservice teachers. To start, the simulation is a safe environment in which the preservice teachers can practice new skills without the fear of teaching the content wrong to real students. If the preservice teacher needs support during their lesson, the simulation can be paused so the preservice teacher can receive feedback, coaching, or reflect with a facilitator, like a teacher educator. Additionally, within the virtual environment, the simulation can be set up so

the preservice teacher teaches a diverse set of students. This is particularly important for the study at hand, as the preservice teachers need access to beginning and intermediate ELLs.

For this study, preservice teachers interacted with Edith and Edgar as they use their sentence frames to create a written paragraph as a small group. Edith entered the United States one month ago and is a beginner ELL in the sixth grade. Previously, Edith attended school in Mexico; however, her family often relocated due to safety and work opportunities causing her to have gaps of knowledge in her literacy skills in Spanish and other subjects. Additionally, neither her mother nor father speak English. When she entered school in the U.S., she was tested in English and Spanish, which showed a beginning level of English proficiency and poor literacy skills in Spanish. Edith does not participate in small or whole group work. When the teacher asks if she understands, she nods and smiles, but struggles to answer simple yes/no questions. Edgar is a US-born ELL at the low-intermediate proficiency level in the eighth grade. He moved from Puerto Rico eight months ago. He can understand and engage in conversational English with simple sentences and grammatical errors but struggles to understand academic discussions. Edgar's Spanish reading and writing skills are below grade level, and in English, his reading and writing skills are very weak (Nutta et al., 2014).

Due to COVID-19, the study was not in person. Instead, the approximation took place through Zoom, in which the preservice teacher, teacher educator, and avatars from TeachLivE™ all meet in a private Zoom room. Each preservice teacher completed the skill seven module independently and then signed up for a TeachLivE™ session to approximate using the sentence frames they created to write a paragraph as a small group with the ELL avatars. For this study, I used an adapted version of the TeachLivE™ sessions explained above to include reflection-for-

action, reflection-in-action, and reflection-on-action rather than how it was originally set up with coaching and feedback during the TeachLivE™ session and an individual guided written reflection after. In the next paragraph, I describe in more detail how joint reflection between the teacher educator and preservice teacher took place during the TeachLivE™ session.

Each approximation took place through Zoom, lasted approximately 30 minutes, and was video-recorded. At the start of the session, the preservice teacher and I engaged in a pre-conference that lasted approximately five minutes in which we reflected-for-action to discuss the preservice teacher's plans for the lesson and what they expect to occur. Once the pre-conference was complete, the preservice teacher "entered" the virtual classroom and began their writing lesson. During the lesson, when a situation of uncertainty occurred, I paused the simulation and engaged in reflection-in-action with the preservice teacher. An example of a situation of uncertainty that occurred was when the preservice teacher was working with the beginning level English learner, Edith, and she either did not respond, shrugged her shoulders, or said "que." It was then that something unexpected in the preservice teacher's plan occurred as the avatar did not know how to respond to the teacher. We then jointly reflected to determine the problem, searched for possible ways to solve the problem, and then reentered the simulation for the preservice teacher to try again. The actual teaching of the lesson lasted approximately 10-15 minutes. At the completion of the lesson, the preservice teacher "ended" the virtual classroom, and we engaged in reflection-on-action, which lasted approximately 10 minutes. During this time, we synthesized the reflection that occurred and developed a professional understanding of using sentence frames to support ELLs' writing. For example, a preservice teacher developed the professional understanding that when interacting with the sentence frames and a beginner ELL,



the teacher must use scaffolding with pictures and concise language so the ELL understands the language used.

### Access

I had access to the elementary preservice teachers from my status as a graduate teaching assistant at the university. Additionally, I had access to the MELTS module from an internship that I completed with the MELTS grant in the Spring of 2020. During this internship, I reviewed the 10 different modules that were put together and participated in coaching sessions during the TeachLivE™ component. At the end of the internship, I received permission to use the MELTS skill seven module for this study in which I adapted the TeachLivE™ session to include joint reflection-for-action, reflection-in-action, and reflection-on-action.

### Pilot Study

During the 2020 Fall semester, I conducted a pilot study called “Engaging Elementary Preservice Teachers in Reflection For, In, and On Practice using Sentence Frames for English Language Learners – A Pilot Study.” The purpose of this qualitative, action research study was: to explore how a preservice teacher and I engaged in joint reflection during an approximation of practice using sentence frames to support ELLs’ writing. More precisely, this study was guided by the following research question:

1. How do a teacher educator and elementary preservice teacher engage in joint reflection during an approximation of practice in a TeachLivE™ setting to develop a professional understanding of using sentence frames to support ELLs’ writing?

In September 2020, I recruited participants from one section of an LAE 4314 class titled *Language Arts in the Elementary School*. This class was selected because they were completing the MELTS skill seven module as an assignment in the course. This semester, the assignment only consisted of completing the digest, videos, and sentence frame creation sections; the preservice teachers were not required to complete the TeachLivE™ practice sessions. To recruit participants, I joined a virtual class session to explain who I am, the purpose of the study, why the study was of importance and interest to them, and provide information on the TeachLivE™ session. As a result, two participants volunteered to participate in the study and signed a consent form to have their TeachLivE™ session and interview recorded.

The participants had the month of October 2020 to complete the module on sentence frames. Upon completing the module, each preservice teacher signed up for a 20-minute TeachLivE™ session in November to practice using their sentence frames to write a paragraph with the avatars on the writing prompt they selected. During these sessions, the preservice teacher and I entered a Skype meeting with the TeachLivE™ avatars. Only one participant was in the TeachLivE™ session at a time. During the first 5 minutes, the preservice teacher and I engaged in reflection-for-action through a pre-conference to discuss (a) what they expected to happen during the session, (b) any challenges the preservice teacher anticipated the ELLs might face while using sentence frames to guide their writing, and (c) how they planned to support any additional related needs of ELLs. The preservice teacher then delivered a 10-minute lesson using the TeachLivE™ avatars/virtual classroom. During the lesson, we engaged in reflection-in-action when something unexpected happened during their teaching to identify the problem, why the problem occurred, possible solutions to the problem, and then tried out one of the solutions with the avatars. After

the lesson, we engaged in reflection-on-action through a post-conference to further reflect on the work we did and develop a professional understanding of using sentence frames to support ELLs' writing skills.

From this study, I found the following related to my use of joint reflection: a) no dissonance or reflection occurred on the ELL at the level three proficiency, b) the preservice teacher did not use judgment, and c) synthesis did not occur. From these findings, I revisited my pedagogical goal of supporting preservice teachers' reflection to develop moves that I could use in my next cycle of action research to ensure the preservice teacher engaged in reflection on the level three ELL, used judgment, and synthesized.

This pilot study, in which I explored (a) how a preservice teacher and I engaged in joint reflection during an approximation of practice to develop their pedagogical skill in using sentence frames to support ELLs' writing, informed the current study in two main ways. First, I found that the time I had for reflection-in-action and reflection-on-action was too short. Therefore, I extended the session to 30 minutes for the current study to add five minutes to each. Second, I used the findings from the pilot study to think through reflective moves that I could use with the preservice teachers to ensure reflection was more likely to occur as we engaged in joint reflection during the current study.

### Methodology of Current Study

This study investigated how I, as the teacher educator, engaged in joint reflection with preservice teachers when dialoguing about using sentence frames to support ELLs' writing during reflection-for-action, reflection-in-action, and reflection-on-action. At the beginning of

this chapter, I identified the theoretical frames that informed this study. I also addressed the problem of focus through the research question presented. The rest of this chapter identifies the qualitative approach that guided this study, my reflexivity, the data collection procedures within the setting of a mixed-reality simulation, TeachLive™, and the process used to analyze data.

### Action Research Approach and Rationale

I utilized an action research approach to conduct this qualitative study. Action research is research done by a practitioner to improve one's practice (Baumfield et al., 2013; McNiff, 2013; Munn-Giddings, 2012). In the case of this study, I, a teacher educator at a university setting, wanted to improve my use of reflection with preservice teachers by shifting away from using written reflection formats to reflection as a process with a more knowledgeable other. By developing my pedagogy in facilitating reflection effectively when teaching, there can be improvement not only on my teaching but also on student learning (Baumfield et al., 2013; Doesmagen & Schwalbach, 2019). Therefore, preservice teachers' practice of using sentence frames to support ELLs' writing also has the opportunity to improve through the approximation of practice in TeachLive™.

Through the action research process, one is "becoming aware of and making public their processes of learning with others, and explaining how this informs their practice" (McNiff, 2013, p. 24). However, in-depth learning of one's practice does not happen in one try; therefore, action research studies are not linear but rather cyclical and occur in cycles (Bradbury et al., 2019; Dosemagen & Schwalbach, 2019; Johnson, 2019; Wadsworth, 2020). Wadsworth further explained that the cycle contains acting on one's practice, observing the practice, reflecting on

the practice, planning for improved practice, and new acting within one's practice (Wadsworth, 2020). From this cyclical nature of research, data collection and analysis can occur simultaneously leading to changes in one's practice throughout the study (Dosemagen & Schwalbach, 2019; Stringer, 2019). For this study, I engaged in three separate cycles, each separated with time in between to provide time to analyze the data to inform future cycles. I further describe the research cycles within the data collection section of this chapter. The validity of the research was also enhanced from this iterative process as learning from the interactions improved the future cycles (Baumfield et al., 2013).

Within an action research study, data needs to be collected on the researcher's thinking and actions, the other participants' thinking and actions, the impact each are having on the other, and the process of creating insights and practices from these interactions (McNiff, 2013). To document my thinking, I engaged in reflective journaling in which I explored and reflected on my role in the research, my biases and beliefs in relation to the topic, and my reasoning behind my action (Baumfield et al., 2013). I further explain how I engaged in reflective journaling when I describe the data collection procedures. This critical component to the data collection process shows the evolution of my thinking and actions within the study (McNiff, 2013). Additionally, the interactions between the preservice teacher and me during the approximations of practice (TeachLivE™ sessions) were video-recorded. After the data was collected, I analyzed it to explain how my practice was improved based on evidence from the data (McNiff, 2013). In this study, I analyzed my practice of using joint reflection to see how reflection was used to support the preservice teachers in using sentence frames with the ELL avatars. By focusing on the joint reflection, I looked at how my thinking and actions interacted and influenced the preservice

teachers' thinking and actions and vice versa in the context of teaching preservice teachers about using sentence frames with ELLs.

### Site and Participants

I selected the university due to its engagement with the MELTS project and its access to the TeachLivE™ program. The course LAE 4314 was selected because it is the course in which the preservice teachers complete skill seven on using sentence frames.

To select participants for this study, I used a purposive sample. A purposive sample is one in which participants are selected because they can provide rich information aligned to the purpose of the study and research question(s) (Patton, 1990). In particular, I utilized a homogenous, purposive sample by selecting only one LAE 4314 course section for my participants. This allowed me to maintain consistency in the course instructor and the directions or expectations of completing the skill module.

To recruit participants, I attended one of the class sessions at the beginning of the semester to explain who I am, the purpose of my study, why the study was of importance and interest to them, and provided information on the TeachLivE™ session. I also posted the Explanation of Research form within the announcements of the class (see Appendix C). This form explains the purpose of the study, the requirements of each participant, and serves as informed consent. As the study was classified as exempt educational research by my university's Institutional Review Board (IRB) (see Appendix D), I did not receive written consent from participants to participate in the study. For preservice teachers who missed the class session I attended, I sent an email with the information.

Five preservice teachers volunteered to participate in the study. This was an appropriate number of participants for the study due to the in-depth nature of the qualitative analysis. All the participants were elementary education majors, enrolled in the same class section of LAE 4314, had never had me as a professor, and were monolingual. Only one of the preservice teachers, Emily, had used TeachLivE™ prior to participating in the study.

This study had minimal risk for the participants and did not exceed the risks associated with activities found in daily life. The possible benefits of the preservice teachers practicing and improving their use of sentence frames for ELLs outweighed any potential risks. Throughout the study, I took measures to ensure participants do not have any added risks. During the TeachLivE™ sessions, I maintained participant privacy by ensuring only one preservice teacher was in the session at a time. All information obtained from the data collection and analysis was kept confidential by storing the data within a password-protected OneDrive account that only my committee and I had access to. Additionally, in the write-up of the results, I provided pseudonyms and took caution in the amount of detail I used in describing the participants. All recordings and transcripts from this study will be deleted after five years.

### Position and Role of the Researcher

In qualitative research, the researcher is a research instrument (Creswell & Poth, 2018). Due to the constructionist perspective guiding this study that meaning is socially constructed, I, as the researcher and teacher educator, was a key source of knowledge during the interactions with the preservice teacher and the data analysis. However, it is important that prior to and throughout the research study, one is reflexive and clear about their positionality and its relation to the study

(Herr & Anderson, 2015; McNiff, 2013). My beliefs and biases directly impacted study's design and the analysis of the findings; therefore, it is important that as the researcher, I fully disclose my beliefs and biases (Baumfield et al., 2013). It is by being reflexive that a researcher examines "how their background, assumptions, positioning, behavior, and subjectivity might impact on the research process and vice versa" (Finlay, 2017, p. 120). However, it is not enough to be reflexive as I wrote these chapters or planned my study. Rather, I needed to be self-aware throughout the research process to more accurately analyze the data (May & Perry, 2013; Pillow, 2003). Below, I describe my positionality, who I am, and how my past experiences impacted this study. I also include my role as a researcher and how I was reflexive throughout the research process of developing the study, collecting data, analyzing the data, and writing up the findings.

### *Position*

In action research, an *insider* conducts the research as a practitioner and researcher (Munn-Giddings, 2012). I am a full-time Doctoral Candidate in the Reading Education Ph.D. track. As part of my graduate teaching assistantship (GTA), I am responsible for teaching undergraduate reading courses to preservice teachers. I have experience facilitating reflection within the undergraduate courses I have taught in a variety of ways. I have had my preservice teachers write written reflections after teaching a lesson and I have met with preservice teachers through a post-conference to reflect on their teaching. As I think about the results of the reflective assignments I have utilized in the past, I realize the preservice teachers were not consistently achieving the level of reflection that Dewey (2018) illustrates through the process of engaging with uncertainty by way of judgment, analysis, and synthesis so a professional understanding is developed.



Although I have taught several undergraduate reading courses, I have never taught the LAE 4314 course, and I have no direct relationship with any of the study participants.

Additionally, much of my research is related to supporting ELLs' literacy development. Prior to becoming a graduate student, I taught fifth-grade English Language Arts to a diverse student population, including multiple ELLs of varying proficiency levels. I have a Bachelor's of Science in Elementary Education, a Masters of Education in Reading Education, and I am ESOL endorsed. Although I have learned a lot about supporting ELLs from these educational experiences, I consistently felt that I was falling short in supporting all of my English language learners within my classroom. I knew *of* scaffolds like graphic organizers, visuals, and sentence frames that I could incorporate into my lessons to support my ELLs, but I did not know *how* to effectively utilize these supports. I also firmly believe in the importance of supporting ELLs' literacy development through differentiated scaffolds. From this belief and my own experiences struggling with implementing effective scaffolds into my classroom, I developed the idea for this study in which preservice teachers can practice using sentence frames to support ELLs' writing in a safe environment with the support of a teacher educator.

### *Role of the Researcher*

I played a key role in the research process as the researcher as well as a teacher educator.

As the teacher educator of this study, I provided support to the preservice teachers through joint reflection-for-action, reflection-in-action, and reflection-on-action during their approximation of practice using sentence frames to support ELLs' writing in TeachLivE™. During the joint reflection-for-action, I utilized questioning techniques and conversational moves

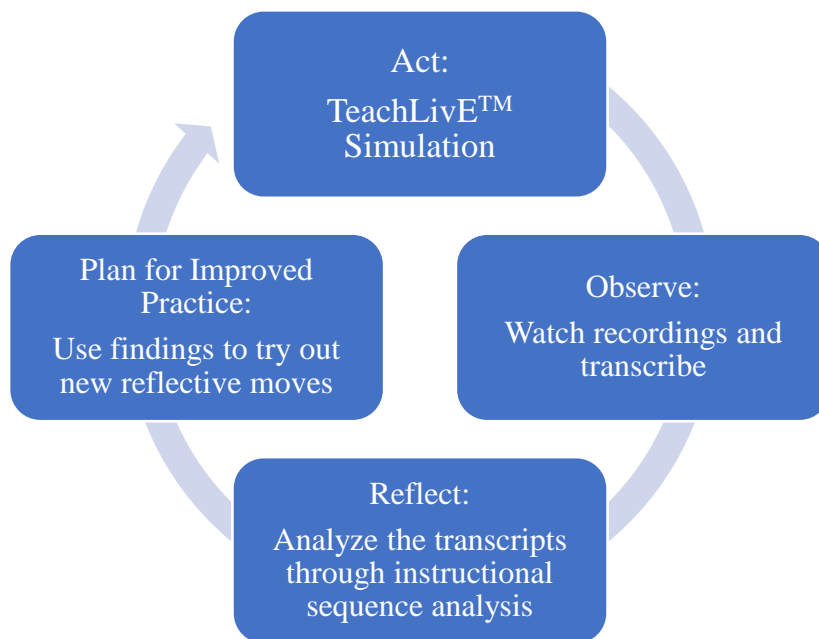
to support the preservice teacher in rehearsing what their lesson would look like and what they expected to happen. Then, while the preservice teacher was teaching the lesson, we engaged in reflection-in-action in which we stopped to interact on a situation of uncertainty, and then used both of our understandings from past experiences and course materials to search for possible solutions to experiment with. Last, after the lesson was over, the preservice teacher and I engaged in reflection-on-action in which we developed a professional understanding of using sentence frames to support ELLs' writing.

As a researcher, my role was to collect data through video-recorded TeachLivE™ sessions, collect the preservice teachers' created sentence frames, engage in reflexivity through reflective journaling and memoing, and analyze and interpret the data. Although the knowledge and experiences I explained in my background may be a source of bias, it was also beneficial and helped strengthen the analysis for this study. To ensure I limit my biases on the results of the study, I triangulated the data, engaged in member checking, and provided thick, rich descriptions (Creswell & Miller, 2000). Additionally, I engaged in bracketing through memoing and reflective journaling. I further describe how I established trustworthiness after I outline the data collection and analysis process.

### Data Collection

Data collection for this study was in the form of video-recorded approximations of practice, the sentence frames preservice teachers submitted in the skill seven module, and my reflective journaling and analytic memoing during the spring 2021 semester. This data helped explore how the preservice teacher and I interacted during joint reflection before, during, and after their lesson

to develop a professional understanding of using sentence frames to support ELLs' writing. As action research is best completed through cycles of inquiry, I collected and analyzed data through three cycles. Wadsworth explains that each cycle contains acting on one's practice, observing the practice, reflecting on the practice, planning for improved practice, and new acting within one's practice (Wadsworth, 2020). The first cycle included one participant during the first week of March. The participant completed their TeachLivE™ simulation, and then I analyzed the data to reflect on my practice of facilitating reflection and used the findings to inform the next cycle. Cycle two occurred in the first week of April, with two more participants completing the TeachLivE™ session. I again analyzed the data to reflect on my practice which informed the third cycle with one more participant completing the TeachLivE™ session. Figure 1 demonstrates the cyclical nature of the research that occurred three times throughout March and April. Following the figure, I describe each piece of data collected in more detail.



*Figure 1: Cycles of Inquiry*

### *Approximations of Practice (TeachLivE™ session) Recordings*

Each preservice teacher completed a TeachLivE™ session in which they used their created sentence frames to engage a level one (Edith) and a level three (Edgar) ELL avatar in writing a paragraph as a small group. During the approximations of practice, the preservice teacher and I engaged in reflection-for-action through a five-minute pre-conference, reflection-in-action while the preservice teacher taught their 10 to 15-minute lesson, and reflection-for-action after the lesson through a 10-minute post-conference. These TeachLivE™ sessions were video-recorded to capture the interactions that took place between the preservice teacher and me.

### *Sentence Frame Document Collection*

I also collected the sentence frames the preservice teachers prepared for the approximation of practice (TeachLivE™ session). Collecting the preservice teacher's sentence frames added information on the sentence frames they used in the simulation.

### *Analytic Memos*

I used analytic memos to document my thinking about the data as I engaged in the analysis process by documenting my thoughts on the coding process and patterns and categories that emerge (Saldaña, 2016). These thoughts were related to insights about the data, frustrations, and unanswered questions (Saldaña, 2016). Through writing analytic memos, I was reflexive in the decisions I made as I analyzed the data and identified interactions, instructional units, and phase units on how these decisions may be influenced by my past experiences, beliefs, and biases. All of my analytic memos were used as data for triangulation purposes.

To further minimize potential bias, I engaged in the process of bracketing. Bracketing consists of the researcher self-reflecting on their beliefs and perspectives of the topic being researched and setting those preexisting assumptions aside to have a more open mind during the research process (Tufford & Newman, 2010). Bracketing, when done thoroughly, can strengthen the data collection, analysis, and interpretations of the findings (Tufford & Newman, 2010). Due to the iterative nature of qualitative research, the researcher must begin bracketing prior to the start of research as these beliefs and assumptions could spread into other components of the research process (Tufford & Newman, 2010). There are many methods to bracketing. For this study, I engaged in analytic memoing and reflective journaling (Tufford & Newman, 2010). Analytic memoing involves the researcher reflecting on their engagement with the data during analysis by noting thoughts in relation to the process of research and the observational feelings and thoughts that occur (Saldaña, 2016; Tufford & Newman, 2010). Analytic memo writing can be on a variety of topics, including beliefs about the topic or participants, code choices, problems or concerns within the study, and future directions for the study (Saldaña, 2016). Reflective journaling includes the researcher exploring their reasons for conducting the study, their preconceptions in relation to the topic, and their role in the research (Tufford & Newman, 2010). I began my reflective journal during the pilot study I conducted in the Fall of 2020 and continued the journal throughout the research process. During this study, I engaged in reflective journaling immediately after each TeachLivE™ session, during data analysis, and any other moments in which I self-reflect. By writing immediately after, I had the information fresh in my mind and reflected deeper on the interactions during the TeachLivE™ sessions and data analysis (Halcomb & Davidson, 2006).

Table 2 summarizes each data source used in this study, whether it was used as a primary source or for triangulation purposes, and how it related to answering the research question.

Table 2

*Description of Data Sources*

| Data Source   | Primary or Triangulating | Relation to research questions   |
|---|--------------------------|--|
| Video-recorded approximations of practice (TeachLivE™ sessions) | Primary                  | Interactions that occur between me as the teacher educator and the preservice teacher.                   |
| Preservice teachers' created sentence frames                    | Triangulating            | Show the possible results from the reflection that takes place.  |
| Analytic Memos  | Triangulating            | Narrative on my interactions with the data and interpretations.  |
| Reflective Journaling   | Triangulating            | Information on my thinking and learning in relation to facilitating reflection with preservice teachers. |

Timeline

The Spring 2021 semester began on January 11, 2021. During the first month of classes, the participants completed the skill seven module independently online. This module was self-paced and had three sections: (a) digest, in which the preservice teachers read about creating and using sentence frames with ELLs, (b) videos, in which the preservice teachers watched a model lesson of using sentence frames with a small group of ELLs, and (c) creating three to five sentence frames on a prompt they selected for use during the TeachLivE™ session. In March 2021, after all participants had completed the module, each participant signed up for and completed a

TeachLivE™ session. The sentence frames were submitted at the completion of the TeachLivE™ session. Table 3 outlines the timeline for data collection.

Table 3

*Data Collection Timeline*

| Month    | Tasks and Data Collected   |
|----------|--|
| January  | Participant recruitment and consent                              |
| February | Skill seven online module  |
| March    | Video-recorded TeachLivE™ sessions<br>Sentence frames submission |

### Data Analysis

In order to gather information on how the preservice teacher and I jointly reflected during the approximation of practice within TeachLivE™, I collected the video-recorded approximations of practice, the preservice teachers' created sentence frames, and my reflective journaling and analytic memos.

### *Transcribing*

First, I transcribed the video-recorded approximations of practice. Transcription was an appropriate method for this study because I investigated the interactions between the preservice teacher and myself. For example, by analyzing the transcriptions, I was able to look at the interactions more closely to see what occurred as we reflected-in-action. Additionally, by reading and analyzing the transcripts, I noticed patterns in the interactions that took place during joint reflection.

The process of transcribing the data collected can never be completely accurate of the actual interaction that occurred; therefore, the researcher must make careful decisions based on the purpose of the study as they transcribe the data (Halcomb & Davidson, 2006; Kowal & O'Connell, 2013). In addition to making decisions on transcription based on the research purpose, the researcher must also be transparent about these decisions and their impact on what is brought to light and what remains hidden from the transcription (Skukauskaitė, 2012). This study focused on the content of the interactions within TeachLivE™, not how the language was actually used; so, I used denaturalized transcriptions (Bucholtz, 2000). Denaturalized transcription maintains the oral language through providing details of the speech (Bucholtz, 2000). Based on the purpose of this study, I did not include the prosodic component with pitch, loudness, and duration nor the paralinguistic components like breathing (Kowal & O'Connell, 2013) as neither of these transcription techniques align with the purpose of the study. In addition, many of the phonetic and prosodic transcriptions require extensive skill and training and are often completed improperly (Kowal & O'Connell, 2013; Lapadat & Lindsay, 1999). As I do not have training in these forms of transcription, and they do not align with the purpose of my study, they were not used. I did include repetitions and pauses within the denaturalized transcription as they could be helpful in my analysis and in representing the reflection that occurred during the TeachLivE™ sessions. Any non-linguistic activity from the video-recorded approximations of practice (TeachLivE™ sessions) related to the interactions of the preservice teacher and I was described in brackets (Kowal & O'Connell, 2013).

Within the literature, many qualitative researchers emphasize the importance of transcribing your own data as the process of transcription can add important insights from the data that might



otherwise be missed (Lapadat & Lindsay, 1999; Skukauskaitė, 2012). However, the amount of data and time a researcher has greatly impacts this decision (Evers, 2011). To begin the transcription process, I first used Zoom's speech-to-text function to get an initial transcription. I then listened and watched the recording and followed along with the initial transcription to make appropriate adjustments and add any important non-verbal activity. I then read through them multiple times to become familiar with the data. After becoming familiar with the data, I began analyzing the transcripts.

### *Rounds of Analysis*

In this section, I describe the rounds of analysis that occurred to analyze the TeachLivE™ sessions.

#### TeachLivE™ Round 1 of Analysis

The interactions that I observed and analyzed depended on the purpose of the research (Green & Joo, 2017; Green & Meyer, 1991). Therefore, to begin the analysis process, I first engaged in holistic coding of the approximations of practice (TeachLivE™ sessions) as a whole to identify segments of the transcriptions that matched the purpose of the research before completing a more detailed coding process. Holistic coding is appropriate when the researcher has an idea of what topics they are investigating in the data before doing a more detailed analysis (Saldaña, 2016). As my research question investigated how the preservice teacher and I jointly reflected, I used holistic coding to identify these moments. For this study, I used the elements of dissonance, analysis, and synthesis that Dewey (2018) articulates within the reflective process to identify moments of joint reflection. I did not include the teaching of the preservice teacher and

the interactions between the preservice teacher and the avatar unless it resulted in the joint reflection of the preservice teacher and me.

### TeachLivE™ Round 2 of Analysis

After I identified the reflective interactions through holistic coding, I then determined the interaction units based on message cohesion and social, semantic, and contextual cues (Kelly & Green, 2019; Green & Wallat, 1981). Interaction units “are sequences of actions (i.e., comprised of message units) tied to turn exchanges as signaled by participants through message and action cohesion and determined by the social, semantic, and contextual cues” (Green and Kelly, 2019, p. 266). Next, using the interactions identified, I structurally mapped how the conversation was socially constructed by determining the thematically related interactions using cohesive, semantic, and contextual cues to determine instructional sequence units (Kelly & Green, 2019; Green & Wallat, 1981). Instructional sequence units, or sequence units, “are cohesive thematically tied interactions identified post hoc through semantic and contextual cues. These units may be thematically tied or may show potential divergences from the developing theme” (Green and Kelly, 2019, p. 267). Finally, by identifying the sequence units related in content and activity, I determined phase units that focused on the instructional sequence’s pedagogical purpose (Kelly & Green, 2019; Green & Wallat, 1981). Phase units “represent sequences of tied SUs that form the foundation of the developing activities marking the ebb and flow of concerted and coordinated action among participants. Phase units reflect a common content and activity focus of the group” (Green & Kelly, 2019, p. 267).

### TeachLivE™ Round 3 of Analysis

From the description produced in the first two rounds of analysis, I created instructional maps of the conversations. The instructional maps show the sequential development of the conversations the preservice teachers and I engaged in while reflecting on using sentence frames with ELLs (Green & Wallat, 1981).

### TeachLivE™ Round 4 of Analysis

To more closely analyze interactions and instructional sequences that were unique or interesting in some way, I relistened to the interactions and instructional sequences to transcribe them using message units (Kelly & Green, 2019; Skukauskaitė, 2014). Message units are defined post hoc and “are the smallest unit of sociolinguistic meaning” (Kelly & Green, 2019, p. 265). They allow the researcher to analyze the interaction moment by moment to see the way meaning was constructed (Skukauskaitė, 2014). To transcribe using message units, you use cues such as pauses and shifts to identify bursts of speech. These pauses signal the researcher to break the line of the transcript as these are the smallest units of meaning (Kelly & Green, 2019; Skukauskaitė, 2014).

The message units were analyzed to provide a detailed description of the interactions that occurred. I then investigated the discourse and social action occurring throughout the message units to illustrate action units (Kelly & Green, 2019). Action units “are comprised of one or more message units that show a semantic relationship among message units and represent an observed intended act by a speaker” (Green & Kelly, 2019, p. 266). An action unit consists of message units that relate semantically by a speaker (Kelly & Green, 2019). It was helpful to consider the

message intent, the content of the message, and contextualization when identifying action units (Kelly & Green, 2019).

Table 4 summarizes the data collection and analysis timeline for this study.

Table 4

*Data Collection and Data Analysis Timeline*

| Month           | Tasks   |
|-----------------|---|
| January         | Data Collection: <ul style="list-style-type: none"> <li>• Participant recruitment and consent</li> <li>• Skill seven online module</li> </ul>   |
| March and April | Data Collection: <ul style="list-style-type: none"> <li>• Video-recorded TeachLivE™ sessions</li> <li>• Sentence frames submission</li> </ul><br>Data Analysis: <ul style="list-style-type: none"> <li>• Transcribe TeachLivE™ recordings</li> <li>• Read and reread the data to become familiar</li> <li>• Round 1 – Holistic coding of interactions</li> <li>• Round 2 – Interactions, instructional sequences, and phase units</li> <li>• Round 3 – Instructional Maps</li> <li>• Round 4 – Message unit and action unit interactions</li> </ul> |

### Trustworthiness

Trustworthiness is how the researcher demonstrates that their findings and interpretations are credible (Dosemagen & Schwalbach, 2019; Herr & Anderson, 2015; Meyer, 2000). I took many steps to ensure the trustworthiness of the data, the researcher, and the inferences made (Dosemagen & Schwalbach, 2019). I engaged in two methods of bracketing, memoing and

reflective journaling in order to enhance the trustworthiness and quality of the research. Through bracketing, I was reflexive and positioned myself, my biases, and the decisions I made within the study to explain how they impacted the approach to the study and the interpretations made during the analysis. In order to further establish trustworthiness, I triangulated the data, engaged in member checking, and provided thick, rich descriptions (Creswell & Miller, 2000; Meyer, 2000). During data collection and analysis, I corroborated the evidence by triangulating the data collected from the TeachLivE™ transcripts, sentence frame documents, analytic memos, and researcher reflective journal. Member checking allowed me to ensure the focus was on the participants and not my own biases and views. I engaged in member checking throughout the cycles of inquiry by bringing my interpretations and findings back to the participant to ensure they are accurate and credible (Creswell & Miller, 2000). By member checking throughout the study and not just at the end, I used the participants' feedback to inform future cycles of research (Baumfield et al., 2013; Meyer, 2000).

Additionally, I provided thick, rich descriptions of the participants, setting, and findings within my write-up while still being careful not to provide too much information so the confidentiality of my participants remained intact. I did this by providing supporting evidence and vignettes from the varying sources of data collected to support the findings of my study. These vignettes provide detail on the interactions or experiences within a specific context so others can determine if the finding is credible and make their own decisions on the transferability of applying the findings to another setting or context of their own (Creswell & Miller, 2000; Meyer, 2000).

## Ethical Concerns

Ethical concerns remained a top priority of this study, especially related to action research and hierarchical roles (Anderson & Herr, 2009). I was not the instructor of record for any of the study participants and did not provide a grade for the approximation of practice. I ensured I followed the methods discussed in this chapter and approved by my institution's IRB (see Appendix D). Prior to the beginning of the study, participants were given the Explanation of Research form, as shown in Appendix C, and were allowed to ask me or my dissertation chairs any questions or concerns they had. Participants were given the choice not to participate or withdraw from the study at any point with no repercussions. The risks to participants in this study were minimal, and all participants were over the age of 18. To minimize confidentiality risks, all data was stored in a password-protected location and will be destroyed after five years.

## Summary

The purpose of this chapter was to outline the research method used to answer the research question. This action research study examined how the preservice teacher and I engaged in joint reflection during an approximation of practice using sentence frames to support ELLs' writing. The following methods and procedures were included in this chapter: (a) theoretical frames, (b) research design, (c) research question, (d) participants, (e) researcher positionality and role of the researcher, (f) data collection procedures, (g) data analysis, (h) trustworthiness, and (i) ethical concerns.

## CHAPTER FOUR: FINDINGS

### Introduction

The purpose of this qualitative action research study was to explore how a teacher educator (myself) and elementary education preservice teachers engaged in joint reflection-for-action, reflection-in-action, and reflection-on-action during an approximation of practice in TeachLivE™ using sentence frames to provide support for ELLs' writing. By exploring how I engaged in joint reflection with the preservice teachers, I was able to better understand the reflective moves that were made during reflection to support the preservice teacher and improve my practice of facilitating reflection. The primary research question for this study was:

*How do a teacher educator and elementary preservice teachers engage in joint reflection during an approximation of practice in a TeachLivE™ setting to support the preservice teachers' professional understanding of using sentence frames as a scaffold for ELLs' writing?*

This chapter presents the findings from this study and describes the moves made by the teacher educator in an attempt to support the preservice teachers as they engaged in joint reflection. The findings are written through personal narrative as action research is the personal study of one's own teaching and development. I used pseudonyms for the preservice teachers throughout the results section to ensure the preservice teachers' anonymity.

The chapter begins with findings from the action research process and how I worked to improve my practice of joint reflection through each cycle. I then describe the elements of reflection that occurred and the reflective moves made that supported or hindered the

reflection through detailed instructional maps of the interactions and instructional sequences that occurred during the joint reflection. Lastly, I describe how I tried to engage in reflection as a unit consisting of reflection-for-action, reflection-in-action, and reflection-on-action to carry the topic of reflection throughout the approximation to support the preservice teacher's development of a professional understanding in creating and using sentence frames with ELLs.

### Action Research Process – Cycles of Improvement

During the action research process, I engaged in three cycles of action in which I acted, observed, reflected, and planned for improvement (Wadsworth, 2020). I acted on my practice of engaging in joint reflection with the preservice teachers within the TeachLivE™ simulation as they conducted their lesson with the ELL avatars. I observed my practice as I watched the simulation recordings multiple times and transcribed the interactions between myself and the preservice teachers. After the simulation, I reflected on my practice within my reflective journal using guiding questions to get my thoughts down on paper (see Appendix F). In addition, I reflected on my practice as I analyzed the transcripts and engaged in memoing as I created instructional maps of the simulations (Saldaña, 2016; Tufford & Newman, 2010). Lastly, I planned for improved practice by using literature on reflection as a process and through collaborations with another professor in which we discussed what I was noticing and ways in which I could improve. I then took what I learned from the cycle and engaged in another cycle of action in which I applied the findings to try out new reflective moves to engage in joint reflection with the preservice teachers.



Below I share information on when each cycle occurred, my findings as I analyzed the data, and my plans for improvement at each cycle. At the end of this section, I present the evolution of my practice across the areas I identified as needing improvement.

### Cycle 1

The first cycle of action occurred in the first week of March 2021. Two preservice teachers were scheduled to participate in this cycle; however, one of the preservice teachers was unable to attend at the last minute. This left one preservice teacher, Laura, to participate in this cycle of action. Laura chose to utilize the writing prompt *My Favorite Animal* with the ELL avatars and had four sentence frames prepared, with the first sentence frame having images to support it (see Appendix G). The simulation lasted a total of 26 minutes and 21 seconds and included the interactions between myself and Laura during reflection-for-action, reflection-in-action, and reflection-on-action, as well as the interactions with the ELL avatars. For this study, I only analyzed the interactions between myself and the preservice teacher for each cycle.

From this cycle of action research, I identified three areas to improve on to better support the preservice teacher as we engaged in joint reflection on using sentence frames to support ELLs' writing. These areas of improvement were a) interrupting the preservice teacher, b) supporting the preservice teacher in identifying the problem and multiple solutions, and c) incorporating more reflective interactions within reflection-on-action. The following sections describe how these problems arose during the simulation and how I planned to improve for the next cycle.

### *Interrupting the Preservice Teacher*

As I observed the recording of the simulation the next day, the first thing I noticed was how often I interrupted Laura. For example, while identifying multiple solutions to solve a problem, I interrupted Laura as she described a solution, as seen in Table 5.

Table 5

#### *Teacher Educator Interrupting Preservice Teacher*

| Line | Speaker          | Transcript   | Analytic notes  |
|------|------------------|--|---|
| 1    | Laura            | um maybe have him say it to us (TE interrupts)   | Uncertain, “us” - reference to Laura and teacher educator                   |
| 2    | Teacher Educator | yes or we could have   | Agrees, connects as “we”, interrupts  |
| 3    | Laura            | once we could have explained it  | Continues thought, “it” reference to sentence frame                         |
| 4    | Teacher Educator | yeah or we could have him say it again to us so based on those two ideas that we have so we could either tell we could um tell him the sentence the correct way or we could have him say it again which one do you want to try out | Agrees, rephrases Laura’s solutions, initiates topic of choosing a solution |

In line one, Laura provided a solution to support Edgar in stating the sentence grammatically correct, but was hesitant in her answer, as shown by her use of the word “maybe.” The use of “maybe” demonstrated Laura’s dependence on me as the teacher educator, as is further visible in Laura’s use of the pronoun “us” to reference herself and me. “Us”, reiterated as “we” by both me (lines two and four) and Laura (line three), shows Laura’s reliance on me as well as my work with Laura to co-construct the solutions. However, Laura’s hesitancy and use of collective “us” in line one inadvertently prompted my interruption, which resulted in limiting potentials for Laura to explore further solutions.

In the second line, I first affirmed Laura's offered solution by saying "yes" and then positioned myself as a co-learner by using "we" and echoing Laura's "us." However, this agreement came in the form of an interruption, as indicated by parentheses at the end of line one. In line three, Laura attempted to continue her thought, yet in line four, I provided a longer explanation without giving Laura the opportunity to further explain what she meant by "we could have explained it." Thus, while I positioned myself as an educator like Laura, through the interruption (line two) and the longer turn talk (line four), I controlled the conversation and limited Laura's potentials for exploring possible solutions for working with Edgar.

As visible through the analysis of the interaction represented in Table 5, interrupting the preservice teacher is problematic when engaging in joint reflection as it stops the preservice teacher from sharing all of their thoughts in that situation. Stopping the preservice teacher's thinking could prevent them from problem-solving and impede their ability to make critical decisions related to using sentence frames with ELLs. Therefore, the teacher educator did not fully understand what the preservice teacher was thinking at that moment to best provide support and reflect on a situation together, as fellow educators. In the example above, Laura did finish describing her solution, but there is no way to know if she would have shared more information about the solution or her reasoning behind the solution had I not interrupted.

To overcome this challenge, I planned to use wait time during the next cycle to ensure the preservice teacher shared their ideas before I furthered the interaction. This would allow me to hear the full thoughts of the preservice teacher and what they know about using sentence frames with ELLs to determine an appropriate response to provide further support.

### *Supporting the Preservice Teacher in Identifying the Problem and Multiple Solutions*

As I began to analyze the transcripts of our interactions more deeply, I noticed that I inconsistently had the preservice teacher identify the problem occurring and come up with multiple solutions to solve the problem. For example, in interaction A, I started by guiding Laura to identify the problem at hand by asking what the problem might be and then asking for solutions. However, after Laura shared the solution of re-asking her question, I accepted her first solution and told her exactly how to re-ask the question, as seen below.

Table 6

#### *Interaction A*

| Line | Speaker          | Transcript   | Analytic notes  |
|------|------------------|--|---|
| 1    | Teacher Educator | so we see that Edith is having a little bit of trouble here what might be a problem that that's occurring like why might we have this issue  | “so” - shift in topic to identify the problem, asks two separate questions  |
| 2    | Laura            | I don't think she knows the question I've asked  | Answers hesitantly  |
| 3    | Teacher Educator | definitely so that can for sure be our problem is that she's not understanding so then how can we solve this what are some options that we can think through what might be what might we be able to do   | Confirms and extends Laura's answer to “understanding”, asks three questions  |
| 4    | Laura            | um I'd like to try to like re-ask it in a way that she might know but I'm not quite sure how to go about that  | Thinking, provides solution, “it” being the question asked, expresses uncertainty in using solution with “I'm not quite sure”   |
| 5    | Teacher Educator | yeah so we can think about we definitely with um L1s with beginner English language learners we want to keep our language very simple okay and so you were doing a good job of simplifying your language and bringing it down to fish yes or no and seeing if she knows that animal you might want to choose an animal that's a little more common um that she might know a little bit better um but that way she can tell you if she if she knows that animal | “with um L1s” - situates context to L1's and provides content knowledge, “doing a good job” – evaluates Laura, “fish yes or no” – provides example, gives suggestion for solution |
| 6    | Laura            | okay   | confirms  |

In line one, I brought focus to the problem by stating, “we see that Edith is having a little bit of trouble,” and then asked the preservice teacher to answer two different questions; one to identify the problem and one to identify why the problem might be occurring. Laura, in line two, then answered the question related to identifying the problem hesitantly by stating, “I don’t think ..” but did not answer why Edith might not know the question. Then in line three, I told Laura why the problem was occurring by stating “she’s not understanding” instead of guiding Laura to identify the problem through questioning moves. I then tried to ask for solutions to the problem but was unclear on the exact question I was asking as I rephrased the question multiple times. Laura gave one solution to “re-ask it in a way that she might know” in line four, using “it” to reference the original question she asked Edith and using “she” as a pronoun for Edith. Laura then expressed feelings of uncertainty to apply the solution she identified to the unique situation by stating, “but I’m not quite sure how....” In line five, instead of guiding Laura to think through how she could re-ask the question, I accepted Laura’s first solution and provided the content knowledge to tell Laura how she could re-ask the question so Edith would understand. Additionally, I praised Laura for the solution she tried of simplifying her language and then provided other solutions Laura could try out in an attempt to better support Edith in understanding the question asked. The interaction ended in line six with Laura confirming by saying “okay” but did not further show that she understood.

By only having Laura come up with one solution, I removed the chance for her to engage in key elements of reflection. Reflection encompasses two key elements, dissonance and searching for information to solve the dissonance. To search for information to solve the dissonance, one identifies the likely problem and develops ideas for solutions from the situation at hand and

previous knowledge and past experiences. Once multiple solutions are developed, one then uses judgment to carefully choose which solution would be best in the specific situation. By accepting the first solution described, I did not allow Laura to develop her professional judgment. As a result, Laura did not have to apply her previous knowledge and past experiences on using sentence frames with ELLs to determine multiple solutions to the problem at hand. Furthermore, by telling Laura exactly how to re-ask the question in a way the ELL could understand, I did not allow for Laura to connect with her prior knowledge to apply what she knew about ELLs at a level one proficiency to figure out the best way to re-ask the question in this situation.

Furthermore, in interaction B, rather than prompting Laura to identify the problem, I told her what the problem was. I then asked for a solution to the problem, and after Laura provided her first solution, I asked the follow-up question, “What would be another option that we might want to use or that we do?” to prompt Laura to provide another possible solution.

Table 7

*Interaction B*

| Line | Speaker          | Transcript  | Analytic notes   |
|------|------------------|---|--|
| 1    | Teacher Educator | Laura I’m going to interrupt for one second I’m noticing something when Edgar says his sentence he says I like monkeys because they funny | Pauses lesson, “I’m noticing” - places emphasis on specific moment |
| 2    | Laura            | yes   | Confirms   |
| 3    | Teacher Educator | do you notice when he says that sentence it's not quite uh correct in the English grammar so what   | Tells Laura problem, asks yes/no question                          |
| 4    | Laura            | yeah  | Interrupts, answers  |
| 5    | Teacher Educator | what can we do to support him so that he's saying a complete sentence that's correct  | Shifts from using “I’m” and “you” to “we”                          |

| Line | Speaker          | Transcript   | Analytic notes   |
|------|------------------|--|--|
| 6    | Laura            | my thought I I my first instinct is to repeat it back to him correctly   | False start, thinking through response   |
| 7    | Teacher Educator | mhmm   | Agrees   |
| 8    | Laura            | um but I also oh my god I feel like I'm way overthinking this sorry  | Continues thought on solution, "I feel like" – expresses feelings, apologizes            |
| 9    | Teacher Educator | no it's okay so one option is we can repeat it back to him um using correct grammar for him to hear and say back to us what would be another option that we might want to use or that we do  | "no it's okay" – reassures, extends Laura's solution, asks for other solution, uses "we" |
| 10   | Laura            | um maybe have him say it to us (TE interrupts)   | "um maybe" - uncertain, "us" reference to Laura and teacher educator                     |
| 11   | Teacher Educator | yes or we could have   | Agrees, connects as "we", interrupts   |
| 12   | Laura            | once we could have explained it  | Continues thought, "it" reference to sentence frame                                      |
| 13   | Teacher Educator | yeah or we could have him say it again to us so based on those two ideas that we have so we could either tell we could um tell him the sentence the correct way or we could have him say it again which one do you want to try out                         | Agrees, rephrases Laura's solutions, initiates topic of choosing a solution              |
| 14   | Laura            | um I feel like it works in a sequence almost like I would have to tell him and then when prompted have him see if he'd like understood by repeating it   | Shifts from "we" to "I", applies solution to context                                     |
| 15   | Teacher Educator | that's perfect so then what you can do is after he said it incorrectly which is what just happened using your language you would say right you like monkeys because they are funny and emphasize the language that he missed out on and have him repeat it | Evaluates, "you" – Laura, "he" – Edgar, provides example of using solution               |

In line one, I paused Laura's lesson to engage in joint reflection to identify the problem at hand by stating, "I'm noticing..." to emphasize a specific moment during the lesson. Laura responded by confirming in line two with "yes" so I further prompted Laura using a yes or no question and then told Laura the problem in line three. Laura interrupted me as she was stating

the problem and agreed with the problem I stated. In line five, I shifted from using “I’m” and “you” in the first four lines to using “we” to position myself as a co-learner. Laura responded with the solution to “repeat it back to him correctly” in line six but showed hesitation in her answer as she started her response with “my thought I I my first instinct..” and then stated she was “overthinking this” and apologized in line eight even though I agreed with her solution in line seven. I then reassured Laura and asked for another solution, as seen in line nine. In line 10, Laura shifted from using the pronoun “I” to “us” to reference herself and me. I interrupted Laura’s thought on identifying another solution in line 11; however, Laura continued her thought as seen in line 12. Instead of further prompting Laura to provide more information on her thought, I provided a longer explanation without giving Laura the opportunity to further explain what she meant by “we could have explained it” before having her select what solution she would try using with Edgar in line 13. In line 14, Laura shifted from using “we” to using “I” as she explained how she would apply the solution she selected to try and solve the problem at hand. I then ended the interaction in line 15 by positively evaluating Laura’s thinking and added further information on applying the solution to the unique situation without giving Laura the chance to first try it out on her own in the simulation.

Although I facilitated Laura in identifying multiple solutions to the problem and use judgment to identify more than one solution, I did not provide additional prompts to scaffold her in identifying the problem at hand. This is an issue, especially in this example, because Laura did not feel dissonance on her own. Instead, I paused the simulation, pointed out something was wrong, and then told her what the problem was. Noticing the dissonance and identifying the cause of the dissonance are vital steps to reflection. If dissonance is not noticed, the teacher will

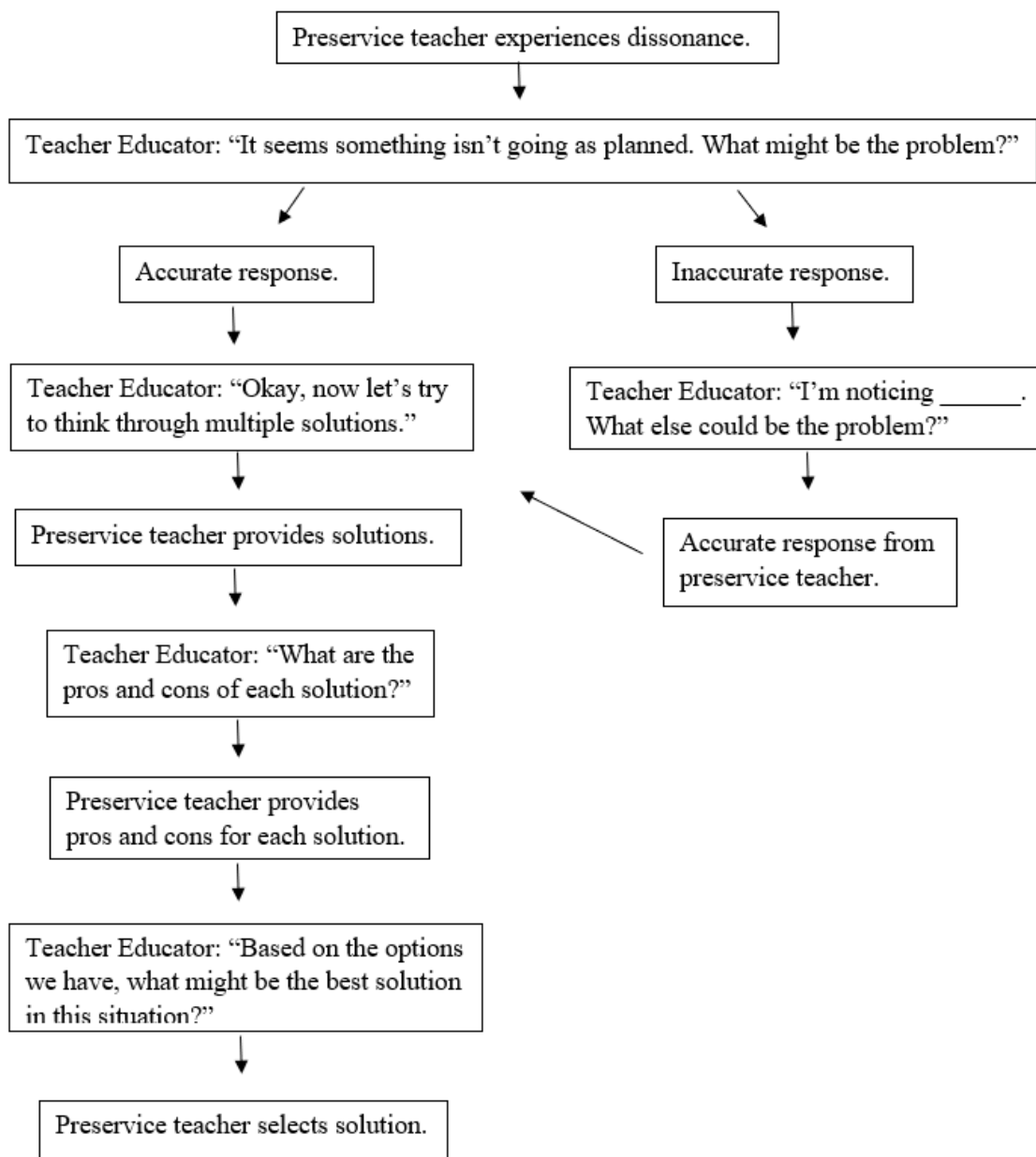


continue teaching, as nothing prompted the reflection to occur. Correctly identifying the cause of the dissonance is important because it sets up the teacher to identify solutions that align with the problem. An incorrect identification of the problem would lead to reflection and solutions that would not accurately solve the dissonance.

Additionally, I did not fully support the preservice teacher in using judgment as I did not help her identify the positive and negative outcomes of each solution from what she knows about using sentence frames with ELLs to ensure she chose the best solution. By only asking the preservice teacher to choose a solution without identifying the pros and cons of each, the preservice teacher could have randomly chosen a solution or chose it for the wrong reasons.

To think through strategic pedagogical moves that could guide the preservice teacher in identifying the problem and possible solutions, I met with a professor who also researches facilitating reflection with preservice teachers to collaboratively think through this issue. Together we identified questioning moves to prompt the preservice teacher. An example question that could be used to prompt the preservice teacher to identify the problem at hand is, “It seems something isn’t going as planned. What might be the problem?” If the preservice teacher inaccurately identifies the problem at hand, further prompting can be used to help support them by asking, “I’m noticing \_\_\_\_\_. What else could be the problem.” By telling the preservice teacher what you are noticing, it helps narrow down what the preservice teacher should be focusing on from the simulation. If the preservice teacher accurately identifies the problem, then the prompt “Okay, now let’s think through multiple solutions to try and solve the problem.” can be used to guide the preservice teacher in identifying multiple solutions to the problem. As the preservice teacher describes a solution, the teacher educator can further support

the preservice teacher's judgment by asking the pros and cons of each solution and having them identify the option that might be best by asking, "Based on the options we have, what might be the best solution in this situation?" The interaction would then end with the preservice teacher choosing a solution and trying it out within the simulation. Below is a chart summarizing the reflective moves that can be used in the next cycle to further support the preservice teacher in identifying the problem and using judgment to select a solution.



*Figure 2: Moves to Support a Preservice Teacher in Identifying the Problem and Multiple Solutions*

### *Incorporating More Reflective Interactions within Reflection-On-Action*

Within my reflective journal, I recorded a lot of my thoughts, observations, and ideas on the amount of joint reflection that should occur between myself and the preservice teacher. I had concerns about pausing the simulation too frequently during the lesson as it could cause the teaching to become choppy. Several pauses could also become overwhelming for the preservice teacher during reflection-on-action if we reflected on every single thing the preservice teacher could improve on. These concerns are seen in the below excerpt from my reflective journal.

*My biggest wondering right now is how much do I focus on. There were so many things I wanted to talk to Laura about during and after her session but I don't want it to be overwhelming and I also know there is a time limit.*

The time limit was also of concern as I knew I only had between ten to fifteen minutes to reflect-on-action with the preservice teacher and wanted to ensure we had plenty of time to synthesize what they learned.

To think through these concerns, I went back into the literature on reflection-on-action and met with the professor again to think through this issue together. Through this process, I decided it could be beneficial for the preservice teacher to revisit another situation from their simulation during reflection-on-action to further support their development in using sentence frames with ELLs. To initiate the conversation of revisiting a specific situation more deeply, the prompt “I noticed \_\_\_\_\_. Let’s think about this a little.” could be used. This open statement would allow me, as the teacher educator, to see what the preservice teacher notices about the situation without guidance. If the preservice teacher needs further support, I could use questioning moves to further emphasize what I am trying to bring to their attention. For example, I could use questions like “What might be interesting about \_\_\_\_\_?” or “What do you notice about \_\_\_\_\_?”. Once

the preservice teacher can identify the problem in the situation, I can then guide them in understanding why it is a problem and how to solve it using similar techniques from Figure 2.

Next, I describe the areas of improvement I identified during cycle two. After describing all three cycles, I end with how my practice of using joint reflection has evolved for each improvement identified.

## Cycle 2

I completed the second cycle of action research at the beginning of the first week of April. It was initially scheduled for the middle of March, but the TeachLivE™ sessions had to be rescheduled due to scheduling issues. This cycle included two preservice teachers, and each of their sessions occurred back to back.

The first preservice teacher, Katie, planned her lesson with the writing prompt *My Favorite Food* to complete with the ELL avatars. She created three sentence frames for Edgar at the level three proficiency that contained two blanks for each sentence. She also created two sentence frames for Edith at the level one proficiency which contained only one blank to fill in with three options, each with pictures (see Appendix H). Her lesson and our interactions lasted 22 minutes and 58 seconds.

The second preservice teacher, Tyler, used the writing prompt *My Favorite Animal* with the ELL avatars. He had four sentence frames for Edith at the level one proficiency level that included one blank with several options that had a visual representation for each. He then had sentence frames for Edgar at the level three proficiency that outlined the structure of a paragraph that started with a topic sentence, then listed the three reasons, included a sentence for each

reason, and ended in a conclusion sentence. Each sentence frame also had an example of a completed sentence (see Appendix I). His lesson and interactions between the ELLs and myself totaled 20 minutes and 46 seconds.

From this research cycle, I identified two areas of improvement to better my practice of using joint reflection with the preservice teacher as they learned to create and use sentence frames to support ELLs' writing. These areas of improvement were a) holding the reflective conversation and b) supporting judgment by identifying the pros and cons. The following sections describe how these problems arose during the simulation and how I planned to improve for the next cycle.

#### *Holding the Reflective Conversation*

During Tyler's simulation, as he ended his interaction with Edgar, I paused the simulation to engage in joint reflection on an ending that would support Edgar to produce the language he created. However, instead of identifying multiple ways to end his interaction with Edgar, Tyler jumped back into his lesson and tried out an ending without engaging in joint reflection first, as seen in Table 8.

Table 8

*Interaction with Tyler*

| Line | Speaker          | Transcript   | Analytic notes  |
|------|------------------|--|---|
| 1    | Teacher Educator | and then Tyler before you end with Edgar so you had him um fill in all of those blanks what is something we can do to end the lesson um with the sentence frames with him  | “so you had him.” – places emphasis on situation, shifts from “you” to “we” for question          |
| 2    | Tyler            | um we could um restate them all together kind of wrap it up so Edgar your paragraph sounds like this I monkeys are my favorite animal I like them because they are funny cute and eat bananas first they are funny because they clap next they are cute because they have a face and little body last they eat bananas because and that's funny because I eat bananas I didn't write that correct but that's how your paragraph sounds | Answers, “so Edgar..” – restarts lesson, reads sentences  |
| 3    | Teacher Educator | perfect and now what can we do so that um Edgar can produce the language as well   | Positively evaluates, further prompts, places emphasis on problem                                 |
| 4    | Tyler            | okay so Edgar will you could read or write in your conclusion your animal and three reasons at the end   | “okay” – confirms, “so Edgar..” – restarts lesson   |
| 5    | Teacher Educator | yeah and you could also let's think about it so you just read through uh the sentences that he completed and you modeled um what the language says so then what could we have Edgar do after you model what the sentences say  | Agrees, “let’s” – Tyler and teacher educator, “so you...” - situates context, “we”, asks question |
| 6    | Tyler            | repeat after me  | Answers   |
| 7    | Teacher Educator | yeah you could have him repeat each sentence after you and why would that be something we would want Edgar to do   | Agrees, restates answer, asks follow up question  |
| 8    | Tyler            | well because I would be modeling it and then he gets to practice what he put in for his sentences  | Answers with benefit  |
| 9    | Teacher Educator | definitely that sounds great that way he's using some of the English so let's try that out   | Agrees, positively evaluates, “let’s try that out” – ends interaction                             |

In line one, I paused Tyler’s lesson to engage in joint reflection on the ending of the lesson. I initiated the conversation by stating, “so you had him um fill in all of those blanks” to focus the conversation on the ending of his interaction with Edgar. I then situated myself as a co-learner when I asked for an alternative ending using the pronoun “we.” Tyler answered “to restate them all together” and then restarted his lesson to try out the new ending without further engaging in

joint reflection to think through his solution. In line three, I positively evaluated Tyler's new ending before asking the follow-up question "what else can we do" and placed further emphasis on the problem at hand so "Edgar can produce the language." This time, in line four, Tyler did not answer but instead confirmed by saying "okay" and tried out another ending to his lesson. In line five, I tried to get Tyler to jointly reflect with me by saying "let's think about it" and situated the context by revisiting the endings that Tyler had tried out before further prompting to have Tyler identify another ending that would support Edgar in producing language. Tyler responded to have Edgar "repeat after me" in line six, and I agreed with Tyler in line seven before further prompting for the benefits of the alternative ending; missing the opportunity to think through drawbacks. In line eight, Tyler responded with the benefit "he gets to practice what he put," and I agreed with the alternative solution before ending the interaction in line nine by stating, "let's try that out."

Tyler's first solution was to read the created sentences aloud to Edgar; however, this did not help Edgar produce any language. I used a follow-up question with Tyler to prompt him to identify other possible solutions to having Edgar produce the language, but again Tyler jumped back into the simulation. This time he did not state the solution before restarting his lesson like he did for the first solution. Instead, he just said "okay" and tried out his next solution, to tell Edgar to write a conclusion. I used the follow-up question, "So then what could we have Edgar do after you model what the sentences say?" and this time, Tyler stated his third solution of having Edgar repeat after him, and I was able to ask why that would be a good thing to do.

Many things could be improved in this interaction. For one, the moment Tyler jumped back into the simulation, I should have stopped him and said, "Hold on, I would like to think this



through together before you try out your solution with Edgar." As written in my reflective journal after the experience, I was thrown off by the way Tyler reacted because we had already engaged in a reflective conversation prior in which I paused his simulation and we thought through the problem and multiple solutions.

*Thinking about the second session, when I paused the interaction to think through the situation with the preservice teacher, I would ask him a guiding question and then he would just jump on an answer and go right back into teaching and try something out which didn't allow us to really think through the situation. I was really caught off guard by this so in the moment I could not really think through how to solve this problem except to let him jump back in and if he struggled to pause it again but this didn't allow for reflection.*

By stopping Tyler and identifying multiple solutions together, it would have allowed for him to use his background knowledge on what ELLs at the developing proficiency level can do and the pedagogy he has learned on using sentence frames to come up with multiple endings to the interaction and then use judgment to choose the best ending based on the situation. I further removed Tyler's opportunity to exercise judgment in this situation when he gave his third and final solution of having Edgar repeat after him. In this situation, I accepted the ending and only asked Tyler for the positive outcomes of this ending and did not have him identify any adverse outcomes. By doing this, I was the one who used judgment by accepting the ending and implying that there were only positive outcomes to this ending.

Should something like this happen again, I can stop the preservice teacher and say, "Hold on, I would like to think this through together before you try out your solution." This will allow me to use questioning moves to guide the preservice teacher in identifying the problem and using background knowledge to develop multiple solutions to the problem as well as the positive and negative outcomes to each solution and then use judgment to select the most appropriate solution.

*Supporting Judgment by Identifying the Pros and Cons of Each Solution*

Within the first cycle, one of my areas of improvement was to further support the preservice teacher to identify the problem and multiple solutions. During this cycle, I found that I more consistently had the preservice teachers identify the problem and multiple solutions to the problem before choosing which solution to try out, as seen in the table below.

Table 9

*Identifying the Problem and Multiple Solutions*

| Line | Speaker          | Transcript   | Analytic notes   |
|------|------------------|--|--|
| 1    | Teacher Educator | Tyler I'm gonna jump in here so we have a little bit of a problem so what might that problem be  | Pauses lesson, “we” – Tyler and teacher educator, asks question about problem                      |
| 2    | Tyler            | uh maybe she's not understanding a like favorite context   | “maybe” – uncertain, identifies problem  |
| 3    | Teacher Educator | yeah so maybe um so we know that she's she understood like because she was able to repeat it but understanding might be the problem correct and so what can we do to kind of support Edith to help her understand what you're asking a little better | Agrees, confusing – “she understood” but also said “understanding might be problem”                |
| 4    | Tyler            | I can say that I like dogs dogs are my favorite animal   | Provides example   |
| 5    | Teacher Educator | okay so one solution is you can model what would be another solution let's try to come up with a couple and then we'll choose one  | Restates using pedagogical term “model”, asks follow up question, explains process, “let’s” “we’ll |
| 6    | Tyler            | uh another one would be modeling um I could ask is maybe an animal not represented do you like another animal not here   | “uh” “um” “maybe” - False starts thinking  |
| 7    | Teacher Educator | good so you could give her an opportunity to choose a different animal if she doesn't like any of those what would be another one  | Positively evaluates, extends response, asks for another solution                                  |
| 8    | Tyler            | um I'm struggling on the cuff to figure it out   | Expresses uncertainty  |
| 9    | Teacher Educator | that's okay we have two so let's think through those two between the two that you came up with which one would you like to try which one do you think would be better for this situation   | Reassures, “so” - shifts topic to choosing solution, rewords question                              |
| 10   | Tyler            | I would probably go with an example I like dogs my favorite to just keep representing that that's what I'm asking for  | Chooses solution and provides explanation  |

In line one, I paused the lesson to engage in joint reflection with Tyler, highlighted the problem, and then asked Tyler what the problem could be. Tyler identified a possible problem in line two but was uncertain in his answer, as shown in his use of the word “maybe.” In line three, I agreed with Tyler but provided conflicting information when I stated, “we know that she’s she

understood,” and then agreed that understanding might be the problem and asked for a potential solution. Additionally, I utilized the term “we” to situate myself as a co-learner but then used “you’re,” which resituated me as the teacher and Tyler as the learner. Tyler then provided an example of what he could do through his use of “I” to help Edith understand in line four. In line five, I provided the pedagogical term “model” when I restated Tyler’s solution and then asked for another possible solution. After asking for another solution, I further explained the process of joint reflection when I stated, “let’s try to come up with a couple, and then we’ll choose one.” In line six, Tyler repeated his first solution using the pedagogical term from me “one would be modeling,” as he thought for other possible solutions. I again agreed with Tyler’s second solution in line six, then restated the solution and asked for another possible solution in line seven. This lead Tyler to express that he was “struggling on the cuff to figure it out” in line eight. I reassured Tyler when I said, “that’s okay” and then shifted the topic from identifying multiple solutions to selecting the best solution out of the options he came up with in line nine, resulting in Tyler selecting to “go with an example.”

In the example above, I used questioning moves to support the preservice teacher in identifying the problem, developing more than one solution, and then choosing the best solution for the situation at hand. However, I did not support the preservice teacher in identifying the pros and cons of each solution. By not identifying the pros and cons of each solution, the preservice teacher may not select the best solution for the problem at hand. For example, Tyler might have chosen the solution of adding more options which would not have been appropriate for Edith at a proficiency level one. Although word banks and options are a way to provide additional support for ELLs at a level on proficiency level, it is important to limit the number of words or options.

By identifying the pros and cons of each solution, it would support the preservice teacher to use their background knowledge of scaffolding ELLs at varying levels and use sentence frames with ELLs to identify how their solution would benefit or not benefit the ELL. Once pros and cons are thought through for each solution, the preservice teacher can then use better judgment to select the best solution to the unique problem.

As shown in Figure 2 within the first cycle, for future interactions, I can incorporate the questioning move “What are the pros and cons to that solution?” after each solution to further guide the preservice teacher in understanding the solutions they identify.

### Cycle 3

The last cycle of action occurred one week after cycle two. One preservice teacher, Emily, participated in this cycle. She chose to utilize the writing prompt *My Favorite Animal* with the ELL avatars and had three sentence frames prepared with a picture of a rabbit and of grass (see Appendix J). The simulation lasted 35 minutes and 21 seconds. I identified two areas to continue thinking about to better support the preservice teacher as we engaged in joint reflection on using sentence frames to support ELLs’ writing. These areas of improvement were a) maintaining a topic of reflection throughout reflection for and in action and b) remembering what occurred during reflection-on-action. In the following sections, I describe how these problems arose during the simulation and how I planned to improve for the future.

#### *Maintaining a Topic of Reflection Throughout Reflection For and In Action*

I wanted to investigate how reflecting on a consistent topic during reflection for, in, and on action might support the preservice teacher in walking away with a professional understanding

through this research. I hoped by having the preservice teacher walk through their lesson and the challenges they could face during reflection-for-action, that during reflection-in-action the conversation would continue if something did not go as planned. Then during reflection-on-action, the preservice teacher and I would synthesize what was learned and create a professional understanding that the preservice teacher could apply to future situations. I provide more information on my findings related to the reflective unit at the end of this chapter. This section describes how I began to think through ways to carry the reflective conversation from reflection-for-action to reflection-in-action.

As Emily and I reflected before the simulation, she described her lesson and how the ELLs might struggle and how she would support them during the instructional sequence of interactions on the preservice teacher's lesson, as seen in the table below.

Table 10

*Emily Describing Her Lesson*

| Phase Unit   | Video Time  | Instructional Sequence           | Interaction Units   |
|--|-------------|----------------------------------|---|
|  |             |                                  | PST describing her lesson to the TE   |
| Interactions on the lesson prior to the simulation | 6:20 – 8:18 | Interactions on the PST's lesson | TE describing how to use the sentence frames to the PST<br><br>PST describing how the ELLs might struggle and how to support them to the TE |

During the interaction of describing how the ELLs might struggle and how to support them, Emily stated that Edith might struggle with the English during the lesson and that she would use

pictures to solve this problem. When she began her lesson, this challenge arose during her first interaction with Edith, as seen in the transcript in Table 11.

Table 11

*Emily's First Interaction With Edith*

| Line | Speaker          | Transcript  | Analytic notes  |
|------|------------------|---|---|
| 1    | Teacher Educator | so what might be the problem  | “so” – shift in topic to ask about problem  |
| 2    | Emily            | um she's not understanding what I'm saying at all   | “she's” - Edith   |
| 3    | Teacher Educator | exactly so um the EL 1 is just not understanding your language and so what could be a solution to help her understand   | Agrees, restates answer, “and so” – shift in topic to ask about solutions   |
| 4    | Emily            | um to bring her actually I don't know I don't want to um to bring her actually I don't know   | False starts– “um to bring her” “I don't want to”, uncertain  |
| 5    | Teacher Educator | that's okay so that's what I'm here for what do you know about um what kind of language we should use with an EL 1 or the amount of language we should use with an EL 1   | Reassures, establishes role, asks guiding question, rewords question from “kind of language” to “amount”                      |
| 6    | Emily            | maybe hand gestures   | Answers, “maybe” - uncertain  |
| 7    | Teacher Educator | okay so you can use hand gestures that's one solution is you can use gestures let's keep thinking what about the amount of language you're using should you be using a lot of language or a little bit of language  | Confirms, restates answer twice, “let's”, refocuses on “amount of language” and gives choice “a lot” “or a little bit”        |
| 8    | Emily            | a little bit of language and maybe slowing down my words  | Chooses answer and provides further solution, “maybe”   |
| 9    | Teacher Educator | okay perfect so we have you just gave us another one so we have that we can use gestures we have that you can um use smaller amount of language and we have that you can slow down your words okay do you want to try all of that or do you want to choose like one or two to try out | Positively evaluates, identifies third solution and restates all solutions, “okay” – shift topic to selecting solution to try |
| 10   | Emily            | I'll try maybe one or two maybe um slowing down my language and maybe try to shorten the sentence   | “maybe”, selects two solutions  |
| 11   | Teacher Educator | perfect so let's think about how can we shorten it if we want her what is what do we want Edith to say  | Positively evaluates, “let's”, asks about application,  |



In line one, I used the word “so” to shift the conversation and ask Emily what the problem “might be” to situate the conversation on possible problems and that there is no one right answer. Emily then answered the question in line two with “she’s not understanding what I’m saying,” using “she’s” to refer to Edith. I agreed with Emily in line three, saying “exactly,” but missed the opportunity to have Emily think through why Edith did not understand before shifting the conversation to identifying solutions to the problem. This missed opportunity may have been the reason for Emily expressing her uncertainty in solving the problem with multiple false starts and stating “I don’t know” in line four and her use of the word “maybe” in lines six, eight, and 10.

In line five, I responded to Emily’s uncertainty by reassuring her and reminding her “that is what I am here for” before using a questioning move to guide Emily to think further about the cause of the problem in relation to the “kind of language” and the “amount of language we should use with an EL 1.” However I was not clear in stating the question as I reworded the question from “kind of language” to “amount.” Emily demonstrated her uncertainty in her answer by starting with “maybe” and providing the solution of using hand gestures. I acknowledged the solution provided by stating “that’s one solution” and encouraged Emily to think through more solutions together as co-learners by saying “let’s keep thinking” in line seven. To place further emphasis on the “amount of language,” I asked the follow-up question on “using a lot of language or a little bit of language,” which led Emily to choose “a little bit of language” and added the solution of “slowing down my words.” In line nine, I positively evaluated Emily’s solutions and shifted the conversation using the word “okay” to the topic of selecting a solution to try. The interaction came to an end in lines 10 and 11 with Emily

combining two solutions she would like to try and me guiding Emily to think through how to shorten the sentence for the situation at hand.

Just before I paused Emily, she was trying to have Edith say her favorite animal was a rabbit and was holding up a picture of a rabbit for Edith. During the interaction, I guided Emily to come up with alternative solutions to the problem of Edith possibly not understanding the language. However, I missed the opportunity to relate what was occurring during this interaction to our conversation as we reflected-for-action before the simulation. I should have reminded Emily that before her lesson she was concerned about Edith not understanding the language and that her solution was to use pictures to help her understand. I then could have guided her into figuring out if the picture was enough to support Edith in this situation and why before identifying other solutions. Engaging in this sort of joint reflection with Emily, could have helped clear up the misunderstanding that just using a picture is enough to support an ELL's comprehension of the verbal and written language. Figure 3 outlines the moves that can be made in the future to help connect the reflective conversation from reflection-for-action to reflection-in-action.

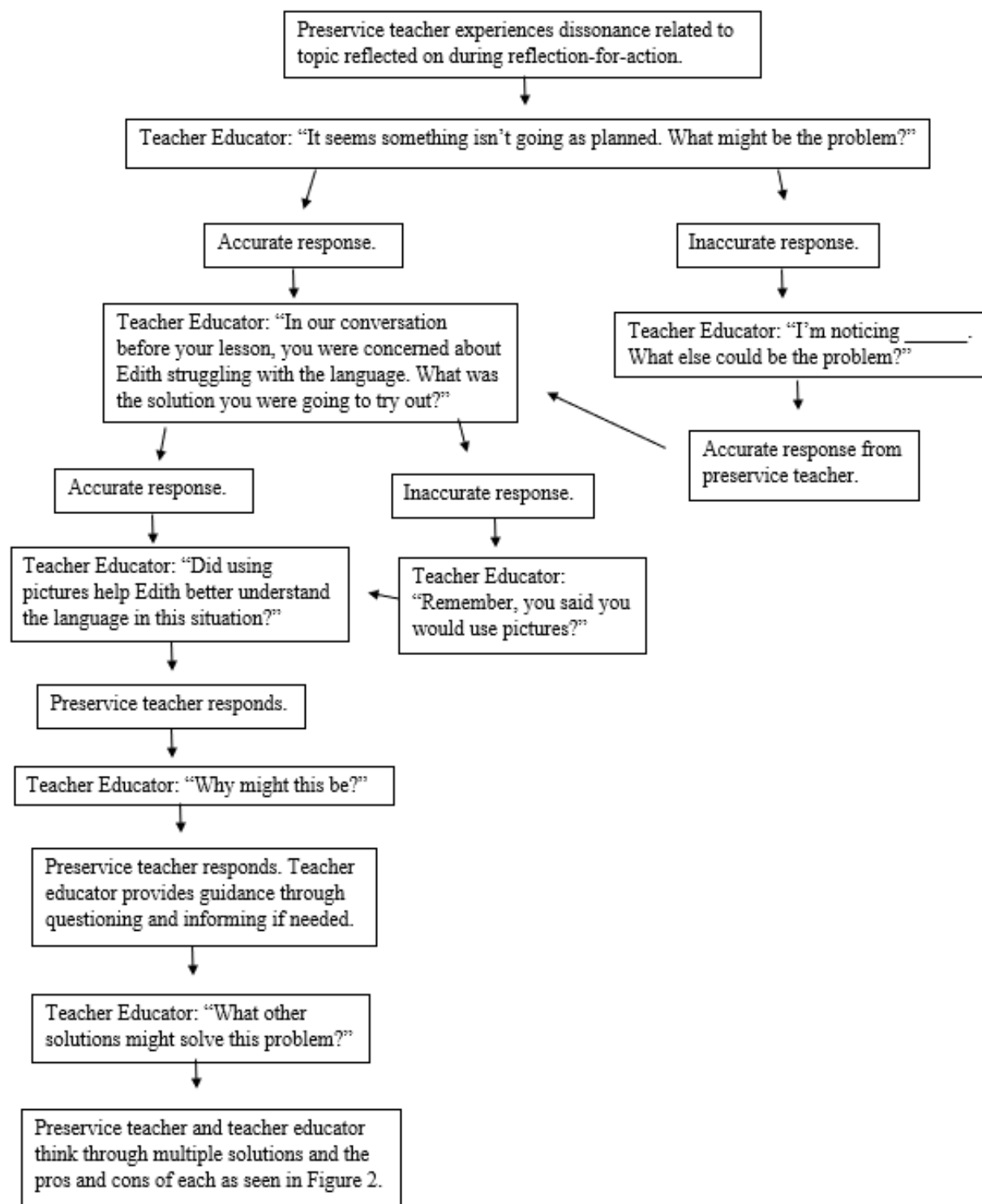


Figure 3: Connecting Reflection-For-Action With Reflection-In-Action

### *Remembering What Occurred During Reflection-On-Action*

In cycle one, I articulated the desire to add in more joint reflection during reflection-on-action in order to revisit situations during the lesson that we did not reflect-in-action on. During Tyler's session in cycle two, I found that when I tried to reflect on a situation after the simulation, I had trouble remembering exactly what occurred during the lesson. The challenges I faced trying to remember how the lesson went can be seen in my reflective journal entry from April 1<sup>st</sup>:

*Another big issue I had was trying to remember an issue that happened during the session to save for a reflection on action. For example, I could not remember how the preservice teacher introduced the lesson for the second student and so I couldn't remember if I needed to reflect on that with him like I did with the first student. I think I will need to take notes during the session to help remind me. There is just so much going on that I am having trouble keeping track of everything.*

As reflected in the entry, my solution to remember what occurred during the lesson was to try and take notes of key things that I thought the preservice teacher would benefit from further reflection on. I tried this solution during Emily's session and found that although I remembered what to reflect on, I did not remember enough of what actually happened to keep the reflection of the situation accurate. For example, the transcript from Table 12 shows I took note of wanting to further interact on Emily's use of pictures during her lesson and whether or not it solved the problem of Edith not understanding the language as it was something that was reflected on before the lesson. However, I did not take note of what actually occurred, leading to an inaccurate representation.

Table 12

*Emily's Reflection-On-Action*

| Line | Speaker          | Transcript  | Analytic notes   |
|------|------------------|---|--|
| 1    | Teacher Educator | now um I want us to think about something kind of interesting that happened so when we started let me find my notes so I can make sure I get it right when we started you were saying that Edith might struggle a little bit that was one of your concerns and you said that using a picture might help her and so I want us to think through when Edith struggled did the picture help Edith um during your lesson | “us” – Emily and I, shifts from we to you when situates context, asks yes/no question          |
| 2    | Emily            | I think it did the first sentence yes right off the bat but the last sentence seemed a little bit more difficult for her so I just try to let me see how can I put it I tried to keep the balance of using the pictures and not using the pictures so I think to the extent the pictures did help   | “think” – uncertain, answers question and extends, “first sentence” “last sentence” - compares |
| 3    | Teacher Educator | okay and then you kind of brought up in the first sentence with my favorite animal is and you held up the rabbit the picture helped but in the second one you're saying it didn't help kind of as much why could it have not helped as much   | Confirms, restates and extends answer, asks follow up question “why”                           |

In line one, I initiated the topic of conversation by stating, “I want us to think about something kind of interesting that happened,” and then used “my notes” to state what happened. I restated the problem Emily identified in her reflection-for-action before her lesson that “Edith might struggle a little bit” and her solution of “using a picture.” I then used the word “us” to situate Emily and I as co-learners as we jointly reflected on if “the pictures help Edith um during your lesson.” Although I asked a yes or no question, Emily, in line two, answered the question by comparing and contrasting when the pictures worked like in “the first sentence...right off the bat” and did not work like in “the last sentence”; however, she showed her uncertainty in her answer by using the word “think” twice in her response. In line three, I confirmed her answer and then extended her answer by restating it with more information from the actual interaction by saying, “you held up the rabbit the picture helped.” I then prompted Emily to think about

“why could it have not helped as much” to identify what led the picture to not support Edith during the last sentence.

From this interaction, it would seem the first time Emily used the picture to support Edith’s completion of the sentence frame it helped Edith understand and fill in the blank, whereas the second time, it did not. However, looking back at the transcript of the interaction, the first time Emily used the picture of the rabbit with Edith to fill in the blank for the sentence frame actually was not successful. Instead, I actually paused the simulation to help Emily identify the problem of Edith not understanding the language and the possible solutions of using gestures, shorter language, and slowing down her language. Having an inaccurate representation of what actually happened led us to reflect on something that did not occur, leading Emily to not develop an accurate understanding of using sentence frames with an ELL at the level one proficiency.

Due to the lesson moving so quickly during the simulation, I do not think a plausible solution would be to try and take more detailed notes. There is no way to write down everything while trying to carefully observe the preservice teacher’s lesson. Alternatively, a solution I would like to try out in the future is to use video-mediated reflection a few days after the session so the preservice teacher and I can view the part of the lesson we are discussing to ensure our reflection is accurate. Therefore, the reflection-on-action directly after the simulation would then consist of revisiting how the lesson went and summarizing the topics that were reflected on by revisiting the problems faced and how they were solved in order to synthesize what was learned and walk away with a professional understanding of using sentence frames with ELLs. Then a few days later, the preservice teacher and teacher educator would come together again to jointly reflect-on-action using the video to help guide the reflection.

### Evolution of Practice

Throughout my engagement in three cycles of action research, I identified and thought through seven improvements that would enhance my practice of engaging in joint reflection with preservice teachers as they develop professional understandings of using sentence frames to support ELLs' writing. These improvements were a) not interrupting the preservice teacher, b) supporting the preservice teacher in identifying the problem and multiple solutions, c) supporting judgment by identifying the pros and cons, d) incorporating further reflection within reflection-on-action, e) holding the reflective conversation, f) maintaining a topic of reflection throughout reflection for and in action, and g) remembering what occurred during reflection-on-action. In the following paragraphs, I articulate how my practice of using joint reflection with preservice teachers has evolved in these areas and where growth is still needed. I did not include the last two areas of improvement as I have not had another cycle of action research to work on these improvements.

My practice of using wait time to minimize the number of times I interrupted the preservice teacher improved after cycle one. Although it was sometimes challenging due to the lag from zoom, I incorporated longer wait time than usual to ensure I did not cut off the preservice teachers' reflection. I also found that because I waited after the preservice teacher finished talking, they had more time to share about the situation and their understanding of creating and using sentence frames with ELLs. By having a more thorough understanding of what the preservice teacher knew about creating and using sentence frames with ELLs, I was able to determine what further content knowledge I needed to provide or model so the preservice teacher could continue developing their pedagogical skill.

In regards to supporting the preservice teacher in identifying the problem and multiple solutions, I improved on consistently having the preservice teachers identify multiple solutions as seen in the instructional maps for Katie (Appendix L), Tyler (Appendix M), and Emily (Appendix N). In cycle two, I was still inconsistent in helping the preservice teachers identify the problem as there were instances in which I told the preservice teacher what to focus on in both Katie and Tyler's simulations. Further improvement occurred in cycle three as I had Emily identify the problem for each time we paused the simulation.

My ability to hold the reflective conversation did improve in cycle three in the following ways: a) I was more metacognitive about the reflective process and how I would facilitate reflection before the lesson began, and b) I made sure to emphasize when I paused the lesson during reflection-in-action that I wanted to identify the problem with the preservice teacher before they started their lesson again.

Although I experienced improvement in many areas, I need to continue developing my pedagogical skill in: a) maintaining a topic of reflection throughout reflection for and in action, and b) remembering what occurred during reflection-on-action as identified in cycle three. Furthermore, supporting preservice teachers' judgment by identifying the pros and cons is an area I still need the most improvement, as demonstrated throughout the cycles. For example, out of the three times I stopped Emily to reflect-in-action, only once did I ask her to identify the pros and cons of each solution and thus support her judgment as she selected which solution to try out.

In the next section of this chapter, I describe the instructional maps of the interactions between myself and the preservice teacher that show the phase units, instructional sequences,



and interactions that occurred to engage in joint reflection during reflection-for-action, reflection-in-action, and reflection-on-action. The complete instructional map for each preservice teacher is in Appendix K, L, M, and N.

### Occurrence of Reflective Elements – Instructional Maps

To further understand the moves made during joint reflection with the preservice teacher to develop their professional understanding of using sentence frames to support ELLs' writing, I created instructional maps of the joint reflection. First, I used holistic coding to identify moments of joint reflection between myself and the preservice teacher (Saldaña, 2016). I then analyzed the transcripts to determine interaction units based on social, semantic, and contextual cues using message cohesion (Green & Wallat, 1981; Kelly & Green, 2019). With the interactions identified, I then mapped the instructional sequences by determining thematically related interactions using social, semantic, and contextual cues (Green & Wallat, 1981; Kelly & Green, 2019). Lastly, I identified the instructional sequences that were related to determine the phase units based on the pedagogical purpose of the instructional sequences (Green & Wallat, 1981; Kelly & Green, 2019). The description produced from each round of analysis formed instructional maps of the conversation during the joint reflection. Figure 4 demonstrates what each round of analysis looked like. Figure 5 shows an example of an instructional map of the joint reflection with one of the preservice teachers. See Appendix K, L, M, and N for the full instructional map of each preservice teacher.

| Time | Speaker | Transcript   | Nonverbal Cues                | Interaction Units  | Instructional Sequence                   | Phase Units  |
|------|---------|--|-------------------------------|--|--|--|
| 8:58 | C       | Hi I all right thank you for your patience as we got set up  |                               | Rows 2 - 5<br>TE and PST Welcome & Greeting                            | Rows 2 - 7<br>Introductions              | Rows 2 - 35<br>Interacting on the lesson prior to the simulation |
| 9:04 | J       | No problem   |                               |  |  |  |
| 9:05 | C       | how are you doing today  |                               |  |  |  |
| 9:07 | J       | Good good  |                               |  |  |  |
| 9:08 | J       | I I remembered about the background I hopefully I printed everything like big enough cause it's hard to like gauge that but i'm excited  | gestures with hands separated | Rows 6 - 7<br>PST describing the set up with TE                        |  |  |
| 9:18 | C       | Perfect well thank you   |                               |  |  |  |
| 9:20 | C       | just a reminder kind of how uh the session will go we'll start off with just a couple minutes talking about your lesson thinking some things through and then once we're done you'll enter the classroom and you'll work with Edith and Edgar using your sentence frames |                               | Rows 8 - 9<br>TE describing the structure of the simulation to the PST | Rows 8 - 12<br>Describing the Simulation |  |
| 9:35 | J       | okay   |                               |  |  |  |
| 9:36 | C       | and then um if you get stuck or something's not going as planned then um you can ask for help or i'll even just jump in and help you out we could think through it together and then at the end we'll uh talk about your lesson  |                               | Rows 10 - 12<br>TE describing how reflection will go to the PST        |  |  |
| 9:49 | J       | perfect  |                               |  |  |  |
| 9:50 | C       | awesome  |                               |  |  |  |

Figure 4: Example of Analysis

| Video Time    | Phase Units  | Video Time   | Instructional Sequence                    | Interaction Units   |
|---------------|--|--|---|---|
| 8:58 - 13:45  | 1- Interacting on the lesson prior to the simulation | 8:58 - 9:19  | 1 - Introductions                         | 1 - TE and PST Welcome & Greeting                                   |
|               |  |  |   | 2 - PST describing set up with TE                                   |
|               |  | 9:20 - 9:50  | 2 - Describing the Simulation             | 3 - TE describing the structure of the simulation to the PST        |
|               |  |  |   | 4 - TE describing how reflection will go to the PST                 |
|               |  | 9:51 - 12:58   | 3- Interacting on the PST's lesson        | 5 - PST describing her lesson to the TE                             |
|               |  |  |   | 6 - PST describing how the ELLs might struggle to the TE            |
|               |  |  |   | 7 - PST and TE identifying how to support the ELLs if they struggle |
|               |  | 12:59 - 13:45  | 4- Follow up to Describing the Simulation | 8 - TE describing how to begin and end the simulation to the PST    |
|               |  |  |   | 9 - PST and TE identifying when to end the lesson                   |
| 13:46 - 15:53 | 2- PST interacting with Edith                        | (For future analysis – does not align with purpose of study) |   |   |
| 15:54 - 18:23 | 3- Interacting on the lesson during the simulation   | 15:54 - 17:21  | 5- Interacting on how to support Edith    | 10 - PST ending interaction with Edith and switching to Edgar       |
|               |  |  |   | 11 - TE pausing the PST's lesson                                    |
|               |  |  |   | 12 - TE and PST identifying multiple solutions                      |
|               |  |  |   | 13 - PST trying out conclusion with Edith                           |
|               |  | 17:22 - 18:02  | PST interacting with Edith                |   |

| Video Time    | Phase Units                                   | Video Time   | Instructional Sequence                      | Interaction Units  |
|---------------|---|--|---|--|
|               |   | 18:03 - 18:23  | 6- Discussing the Lesson Structure          | 14 - PST asking the TE about the structure of her lesson       |
| 18:24 - 22:58 | 4- PST interacting with Edgar                 | (For future analysis – does not align with purpose of study) |   |  |
| 22:59 - 31:56 | 5- Revisiting the lesson after the simulation | 22:59 - 23:18  | 7- Ending the Simulation                    | 15 - PST exiting classroom                                     |
|               |   |  |   | 16 - TE dismissing the avatars                                 |
|               |   | 23:19 - 28:23  | 8 - Revisiting the Lesson                   | 17 - PST informing the TE the problem she faced                |
|               |   |  |   | 18 - PST and TE revisiting solutions to the problem identified |
|               |   |  |   | 19 - TE describing the topic to reflect on to PST              |
|               |   |  |   | 20 - PST describing her introductions to TE                    |
|               |   |  |   | 21 - TE describing topic of comparing introductions to PST     |
|               |   | 28:24 - 29:10  | 9 - Interruption                            | 22 - TE informing PST about creating breakout room             |
|               |   |  |   | 23 - PST informing TE about setting up wait room               |
|               |   | 29:11 - 29:48  | 10 - Follow up to Interacting on the Lesson | 24 - TE and PST revisiting the differences in introductions    |
|               |   | 29:49 - 31:26  | 11 - Synthesizing what was learned          | 25 - TE informing PST on the importance of synthesis           |
|               |   |  |   | 26 - PST and TE filling in the sentence frame                  |
|               |   | 31:27 - 31:56  | 12 - Ending the Session                     | 27 - TE thanking the PST and explaining the next steps         |
|               |   |  |   | 28 - PST and TE ending the interaction                         |

Figure 5: Example of Instructional Map

To begin creating the instructional maps, I first looked at the transcript to identify the exchanges that matched the purpose of the study in investigating how the preservice teacher and I jointly reflected. Although I did not analyze the exchanges between the preservice teacher and

ELL avatars during the simulation, I showed when the interactions occurred within Figure 5 through a grey background, as seen in phase units two and four.

Once I identified the parts of the transcript that aligned with my study, I then determined the interaction units. Interaction units “are sequences of actions (i.e., comprised of message units) tied to turn exchanges as signaled by participants through message and action cohesion and determined by the social, semantic, and contextual cues” (Green and Kelly, 2019, p. 266). I used message cohesion and social, semantic, and contextual cues to determine which interactions between the preservice teacher and I were a unit. For example, before Katie’s simulation, I said, “just a reminder kind of how uh the session will go we’ll start off with just a couple minutes talking about your lesson thinking some things through and then once we’re done you’ll enter the classroom and you’ll work with Edith and Edgar using your sentence frames” and Katie responded with okay. This exchange between Katie and I related in message cohesion, so I labeled them as TE (teacher educator) describing the structure of the simulation to the PST (preservice teacher). I then said, “and then um if you get stuck or something’s not going as planned then um you can ask for help or I’ll even just jump in and help you out we could think through it together and then at the end we’ll uh talk about your lesson.” My use of the words “and then um” shows a shift in the topic of conversation to how reflection will go, so I did not include this exchange, as it did not relate to describing the structure of the simulation. I continued this process throughout the transcript to identify exchanges that related in topic to create the instructional units.

Once I had the instructional units identified, I then determined the instructional sequence units. Instructional sequence units, or sequence units, “are cohesive thematically tied interactions

identified post hoc through semantic and contextual cues. These units may be thematically tied or may show potential divergences from the developing theme” (Green and Kelly, 2019, p. 267). I identified the instructional sequence units by looking at each interaction unit to see which were related thematically. For example, in Figure 5, interaction units three and four both related to me telling Katie about what to expect during the simulation; therefore, the two interaction units became the instructional sequence “describing the simulation.” I continued this process throughout the interaction units to identify the related interactions to create each instructional sequence.

Lastly, once I identified all the instructional sequences, I then determined the phase units. Phase units “represent sequences of tied SUs [sequence units] that form the foundation of the developing activities marking the ebb and flow of concerted and coordinated action among participants. Phase units reflect a common content and activity focus of the group” (Green & Kelly, 2019, p. 267). To determine the phase units, I looked at the instructional sequences and determined which were related based on the content and pedagogical purpose. For example, in Figure 5, instructional sequences one through four included the preservice teacher and I’s exchanges related to their lesson and the simulation before they began. Therefore, these instructional sequences became the phase unit “interacting on the lesson prior to the simulation.” I followed a similar process to identify the other two phase units.

During the process of determining the interaction units, instructional sequences, and phase units, I had to continue going back to the transcript to look more closely at the exact exchange that occurred to determine message cohesion and look more closely at social, semantic, and contextual cues to determine which were related with which. There were also several instances in

which I initially labeled exchanges, interactions, or instructional sequences together and then realized after further analysis that they did not go together and had to go back to the transcript to try again. Lastly, I found that it took several attempts to accurately label the interaction units, instructional sequences, and phase units based on the exchanges occurring within. I often went back into the transcript and noticed that my labeling did not accurately resemble what was occurring in the exchange and had to go back to the transcript to more closely notice what was occurring to label them more accurately. Therefore, the analysis process was not a neat, linear process but rather a reciprocal one in which I continuously went back to the transcript and the analysis I did in an attempt to be as accurate as possible.

Through the creation of instructional maps, I was able to look more closely at what instructional sequences and interactions occurred as I engaged in joint reflection with the preservice teacher, the moves I made to support the preservice teacher through reflection, and what reflective elements occurred and how.

Across all four instructional maps, the preservice teacher and I engaged in three phase units starting with 1) interactions on the preservice teacher's lesson prior to the simulation, 2) interactions on their lesson during the simulation, and 3) revisiting their lesson after the simulation.

In the following sections, I describe the instructional sequences and interactions that occurred during each of these phase units and how they led or did not lead to reflective elements occurring.

### Interactions on the Preservice Teacher's Lesson Prior to the Simulation

The instructional sequences that occurred for all four preservice teachers within the first phase unit of interactions on the preservice teacher's lesson prior to the simulation included a) introductions, b) describing the simulation, c) interactions on the preservice teacher's lesson, and d) a follow up to describing the simulation. The instructional sequence of apologizing for an issue only occurred for Tyler and Emily. Below is a table that shows the instructional sequences and interactions of each of the preservice teacher's lessons during the phase unit.

Table 13

*Instructional Map of Interactions on the Preservice Teacher's Lesson Prior to the Simulation*

| Instructional sequence                          | Interactions  | Preservice teacher   |
|---|---|--|
| Apologizing for issue                           | TE apologizing to PST<br>TE informing PST of Issue  | Tyler and Emily<br>Tyler                                       |
| Introductions                                   | TE and PST Welcome and Greeting   | All  |
| Describing the simulation                       | PST describing set up with TE<br>TE describing the structure of the simulation to the PST<br>PST clarifying the levels of the avatars with the TE<br>PST clarifying what the lesson is with the TE<br>PST and TE informing the number of sentence frames<br>TE describing how reflection will go to the PST | Katie<br>All<br>Emily<br>Emily<br>Emily<br>Laura, Katie, Emily |
| Interactions on the preservice teacher's lesson | PST informing the lesson prompt to the TE<br>PST describing their lesson to the TE<br>PST and TE describing the structure of the lesson<br>TE describing how to use the sentence frames to the PST<br>PST describing how the ELLs might struggle and how to provide supports to the TE                      | Tyler<br>All<br>Tyler<br>Emily<br>All                          |
| Describing the simulation                       | PST and TE entering the classroom<br>TE informing the PST on the ELLs she will be working with<br>TE describing how to begin and end the simulation to the PST<br>PST and TE identifying when to end the lesson<br>TE informing the PST to enter the classroom  | Laura<br>Laura<br>Katie, Tyler, Emily<br>Katie<br>Emily        |

The instructional sequence introductions included the interaction unit of the teacher educator welcoming and greeting the preservice teacher. Both Tyler and Emily's instructional maps began with the teacher educator apologizing for an issue with the Zoom waiting room but then led into the introductions and followed the same instructional sequences.

The instructional sequence describing the simulation came after the introductions and included a description of the structure of the simulation to the preservice teacher and the process



of joint reflection. However, during Tyler's interaction, I did not have a whole interaction on the reflective process and instead combined it with the interaction of the structure of the simulation. Not having the interaction on the reflective process may have impacted how reflection occurred during his lesson as there were times I tried to engage in joint reflection, but he would jump back into the simulation without reflecting. I describe these interactions in more detail within the next phase unit. Additionally, Emily clarified the levels of the ELLs she was going to be interacting with, what the lesson included, and how many sentence frames she was expected to use.

Next, as we interacted on the preservice teacher's lesson, the preservice teacher described their lesson, described how the ELLs might need additional support during the lesson, and then described how they would provide support to the ELLs if needed. By having the preservice teacher walk through their lesson, I hoped they would then notice the dissonance on their own when something was not going as they had planned. However, out of the 11 times we jointly reflected on their teaching, preservice teacher initiated five. Looking more closely at the five times the preservice teacher paused the simulation to ask a question, three of the times the preservice teacher asked about the lesson structure. For example, one of the lesson structure questions from Laura was regarding if she should work with the ELLs at the same time. The other two times the preservice teachers paused the simulation was to ask for help when they got stuck working with either Edith or Edgar. Laura paused the simulation to ask for help with Edith because she was not understanding the question that was asked. Laura solved this problem by simplifying her language.

Interestingly, as she walked through her lesson before the simulation, she stated how Edith might have trouble with the lesson's vocabulary. This is an example of a time that what was

reflected on during reflection-for-action carried over into reflection-in-action. Emily, on the other hand, paused the simulation to ask for help with Edgar because he did not understand what fill in the blank was. During her reflection-for-action, she was not concerned with Edgar having any challenges during the lesson; instead, her only concern for challenges was with Edith not understanding English. Tyler was the only preservice teacher to not pause the simulation on his own. This is interesting because, based on his instructional map, he was also the only one who did not have the interaction “TE describing how reflection will go to the PST” during the instructional sequence describing the simulation. Instead of having a whole interaction on how reflection will go, I very briefly stated that he could ask for help if he got stuck within the interaction of me describing the simulation structure. These findings show that it may be important to ensure that describing how reflection will go occurs as a separate interaction to ensure the preservice teacher understands that they can pause their teaching and ask a question.

The phase unit then ended with a follow-up to the description of the simulation consisting of the interaction in which I further described how to begin and end the simulation to the preservice teacher. Katie showed concern about knowing when to end the simulation, so we further thought through when the lesson would be over prior to her beginning the simulation. Laura’s instructional sequence was a little different as the follow up to the description of the simulation included her entering the simulation and then asking which students she would be interacting with as the simulation had five students in it and she was only going to be working with two, Edith and Edgar in the front row. After the phase unit, each preservice teacher entered the simulation and began their lesson using sentence frames to support the ELLs’ writing.

### Interactions on the Preservice Teacher's Lesson During the Simulation

The next phase unit of interactions on the preservice teacher's lesson during the simulation always began with the preservice teacher and I interacting on how to support Edith. The instructional sequences that occurred within this phase evolved as my practice of engaging in joint reflection with the preservice teacher was reflected on. For example, with Laura during the first cycle of action research, the instructional sequence included the preservice teacher interacting with Edith, the preservice teacher asking for help, the preservice teacher and I identifying the problem together, the preservice teacher and I identifying one solution, and the preservice teacher trying out the solution with Edith. With Emily in the last cycle of action research, the instructional sequence included the preservice teacher interacting with Edith, me pausing the lesson, the preservice teacher and I identifying the problem and three solutions, us choosing a solution to try out, us understanding the solution selected, and then the preservice teacher trying out the solution with Edith. As seen in these two examples, Emily thought through more solutions to the problem she faced and used judgment to select what she thought was the best solution based on the pros and cons of each and the current situation. On the other hand, Laura did not use judgment because she came up with one solution and then tried it out right away without identifying any other possible solutions for the current problem.

Therefore, the number of instructional sequences, interactions, the topic of reflection, and the occurrence of reflective elements varied significantly across instructional maps. The instructional maps also represent diversity and uniqueness according to the individual needs of the preservice teachers, the manner in which they taught their lesson, and how I supported the preservice teachers in reflection.

Next, I outline the interactions that led to key reflective elements, the preservice teachers that experienced the reflective element, and examples of the interactions.

Dissonance, the feeling of uncertainty or doubt, is the first major component of reflection as it is the feeling of dissonance that starts the reflective processes. The interactions that led to the preservice teachers engaging in dissonance were a) the teacher educator pausing the preservice teacher's lesson, b) the preservice teacher asking the teacher educator about the structure of her lesson, and c) the preservice teacher asking the teacher educator for help. Table 14 shows the interactions that occurred that led to dissonance, the preservice teachers who engaged in the interactions, and an example of each interaction from one of the lessons.

Table 14

*Interactions Leading to Dissonance*

| Reflective Element | Interactions  | Preservice Teacher         | Example   |
|--------------------|---|----------------------------|---|
| Dissonance         | TE pausing the PST's lesson                         | Katie, Tyler, Laura, Emily | TE: Katie I'm going to interrupt for one minute<br>okay<br>K: okay  |
|                    | PST asking the TE about the structure of her lesson | Katie, Laura               | L: at this point should I try to have her write it or should I<br>TE: no you're okay just having them produce what they would write since the avatars can't actually write<br>L: okay |
|                    | PST asking TE for help                              | Laura, Emily               | L: can I ask for help<br>TE: yes of course that's why<br>L: okay sorry  |

All four preservice teachers experienced dissonance at some point during their simulation; however, the way dissonance occurred and the number of times each preservice teacher experienced dissonance varied. All the preservice teachers experienced dissonance by me

pausing their lesson to help them notice that something was not going correctly. Interestingly, this was how dissonance occurred most frequently throughout all of the simulations. Three out of the four preservice teachers noticed at least once that they were uncertain about how to move forward in their lesson or that something was not going as planned and paused the lesson on their own to ask for help. Having the preservice teacher notice the dissonance is ideal during reflection because they will not always have a more knowledgeable other by their side as they teach. Therefore, a basic element in becoming a reflective practitioner includes preservice teachers engaging in pausing and noticing when something is not going as planned in their instructional decisions.

Analysis is another important element of reflection that I hoped to engage in with the preservice teacher. Analysis consists of the preservice teacher placing emphasis on important moments within their lesson. A key component of analysis is using judgment to choose what ideas and solutions are worthy of focusing on and which to put aside based on the situation and knowledge of using sentence frames with ELLs. The interactions that led to the preservice teachers engaging in analysis and judgment were a) the preservice teacher and teacher educator identifying the problem, b) the preservice teacher and teacher educator identifying another solution, or c) the preservice teacher and teacher educator identifying multiple solutions, d) the preservice teacher choosing a solution to try out, e) the preservice teacher and teacher educator identifying the pros of the solutions, and f) the preservice teacher and teacher educator identifying the cons of the solutions. Table 15 summarizes the interactions that occurred to lead to analysis and judgment, the preservice teachers who engaged in these interactions, and an example of each interaction from one of the lessons.

Table 15

*Interactions Leading to Analysis and Judgment*

| Reflective element    | Interactions                                       | Preservice teacher  | Example  |
|-----------------------|--|---------------------|--|
| Analysis and Judgment | PST and TE identifying the problem                 | Tyler, Emily, Laura | TE: Tyler I'm gonna jump in here so we have a little bit of a problem so what might that problem be<br>T: uh maybe she's not understanding a like favorite context<br>TE: yeah so maybe um so we know that she's she understood like because she was able to repeat it but understanding might be the problem correct  |
|                       | PST and TE identifying another solution            | Emily, Tyler        | TE: what could be another solution let's try to think of a few and then we can choose which one we want to try<br>E: I guess just do the same thing with uh Edith<br>TE: yep you could do what you did with Edith where you went word by word  |
|                       | PST and TE identifying multiple solutions          | Emily, Katie        | TE: so you just had um Edith she was able to fill in the blanks what is something that you might be able to do now that she was able to fill in the blanks with the sentences<br>K: oh now she could like maybe write them if she had like a copy she could insert that one like that word in there now she knows what the word is associated with the picture or um<br>TE: definitely so one thing we can do so you kind of did your little mini lesson with Edith and so now one possibility is now that it's over you could have her write and fill in what else can we do to have her produce language a little more language<br>K: oh she could like repeat the sentence back<br>TE: definitely that's a great idea so then you could have her repeat the sentence back with the word she filled in that way she can practice using a little more English |
|                       | PST and TE identifying the pros (of the solutions) | Emily               | TE: what would be a benefit to that what would would be a pro for that<br>E: a pro for that would basically him pronouncing the words correctly<br>TE: yeah you would be able to pronounce the words correctly and what else if we give him a model of how to fill in the blank what would that help him with<br>E: um obviously with his writing skills and maybe pronunciation maybe<br>TE: yeah it'll help him pronounce yes and then let's think about the problem will it help him solve the problem of not understanding fill in the blank<br>E: yes I think it would<br>TE: yeah so there's that pro  |

| Reflective element | Interactions                                       | Preservice teacher | Example   |
|--------------------|--|--------------------|---|
|                    | PST and TE identifying the cons (of the solutions) | Emily              | <p>TE: and then what would be a con to doing exactly what we did with Edith</p> <p>E: the only thing I'm getting nervous sometimes with is like if they're just memorizing memorizing it and not really learning it like what the words are basically</p> <p>TE: yeah so maybe if we do one word at a time he might not be really learning the language it'll be a good thing for Edith for level one because she's lower but maybe for level three he wouldn't be learning the language as much</p> <p>E: right</p> <p>TE: perfect</p> |
|                    | PST choosing a solution to try out                 | Tyler, Emily       | <p>TE: that's okay we have two so let's think through those two between the two that you came up with which one would you like to try which one do you think would be better for this situation</p> <p>T: I would probably go with an example I like dogs my favorite to just keep representing that that's what I'm asking for</p>   |

Analysis usually started with the preservice teacher and myself identifying the problem, initiated by my use of a questioning move along the lines of “what might be the problem.” The questioning move helped the preservice teacher to place emphasis on a specific moment in their lesson and then to reflect further about the moment to identify what might be the problem. Katie was the only preservice teacher who did not engage in the interaction of identifying the problem. Instead, I told Katie what to focus on for the problem. For example, after Katie got done working with Edith, I told her to identify alternative ways to end the interaction she had with Edith without having her notice the issue with the original way the interaction ended and why it was an issue. Therefore, a move that I made that did not allow engagement in analysis consisted of me informing the preservice teacher of the problem.

Once a plausible problem was identified, the preservice teacher and teacher educator then thought through multiple solutions. The ability to identify multiple solutions requires the preservice teacher to search for information from a) content knowledge from past courses on creating and using sentence frames with ELLs and the appropriate level of instruction for each proficiency level and b) past experiences working with ELLs to develop possible solutions based on the problem at hand, why the problem occurred, and how to solve that problem. As the preservice teacher identifies the solutions, the teacher educator may need to provide further prompting and guidance as the preservice teacher works to come up with the solutions. To support the preservice teacher in identifying multiple solutions, I used questioning moves like “what could be a solution to the problem” and “what could be another solution.” During Laura’s simulation, I did not use this second questioning move leading her to not fully engage in analysis as no judgment took place. Instead, the preservice teacher provided a possible solution, and I



accepted it, causing me to be the one who engaged in judgment rather than the preservice teacher.

A further interaction I used to guide the preservice teacher in using judgment was through the interactions of identifying the pros and cons of the solutions. By identifying the pros and cons of each solution, the preservice teacher used content knowledge and past experiences to help them identify which solution would be best in the situation they were in and which solutions could be discarded. The only preservice teacher who engaged in using judgment in this way was Emily. Laura, Katie, and Tyler did not identify the pros and cons of the possible solutions they identified. This is problematic as the preservice teacher could select a solution that may not fix their problem or get lucky and choose the right solution without knowing why it was the best option. It should be noted, the teacher educator may be needed to provide additional content knowledge and support to come up with the pros and cons of each solution. For example, when working with Emily, she described a con to modeling filling in the sentence frame for Edgar would be he would be able to pronounce the words. Having an intermediate ELL accurately pronounce the words is something we want them to achieve when working with sentence frames. Consequently, I followed up by providing content knowledge on using sentence frames with ELLs to explain that a benefit to modeling the sentence frame is that the ELL can hear the language to pronounce the words more accurately. In contrast, a con to modeling the use of the sentence frame could be that the ELL says exactly the same thing. I then provided a solution to the con by telling the preservice teacher to use a different animal rather than a rabbit. By providing content knowledge and experiences on using sentence frames with ELLs to further support the preservice teacher as they reflected, I engaged in the pedagogical move of informing

the preservice teacher. Throughout the rest of the instructional maps, I utilize this informing move when the preservice teacher has misunderstandings or gaps in their knowledge regarding creating and using sentence frames with ELLs.

Lastly, I used the interaction of having the preservice teacher choose one of the solutions to try out to see if it did solve the problem. Both Tyler and Emily experienced using judgment to choose a solution to try out based on the situation at hand. Laura did not engage in judgment to decide what would be the best solution because I accepted her first solution, and Katie missed this opportunity because I selected the best solution for her after she identified multiple solutions.

#### Revisiting the Preservice Teacher's Lesson After the Simulation

During the last phase unit of revisiting the preservice teacher's lesson after the simulation, the instructional sequences of ending the simulation, revisiting the lesson, synthesizing what was learned, and ending the session occurred for each preservice teacher. In addition, Katie engaged in the instructional sequence of an interruption. The interruption occurred as we revisited her lesson because the waiting room did not work in Zoom and Tyler entered early. I created a breakout room for Tyler to go to while Katie and I finished jointly reflecting on her decisions throughout her lesson.

The first instructional sequence of this phase unit was ending the simulation, which included the preservice teacher exiting the virtual classroom and me dismissing the ELL avatars. During Tyler's session, I forgot to dismiss the avatars, so I had to interrupt the interaction we were having as we revisited his lesson and the problems he faced. Luckily, this interruption did not

alter the conversation as once the avatars left, I reminded him of the problems he identified and asked how he tried to solve those problems during his lesson.

The instructional sequence of revisiting the lesson changed considerably as I progressed through the cycles of action research. For example, during Laura's session in the first cycle, it consisted of interactions on how the lesson went, revisiting the problems she faced, revisiting the solutions to the problem, and ended with me informing her how to figure out the problem. These interactions ended up being a summary of the reflection we engaged in during her lesson. In the second cycle, I wanted to try out revisiting an issue that we did not jointly reflect on during the lesson. Therefore, during Katie's session, not only did we engage in similar interactions as Laura's session in which we summarized the problems she faced and the solutions she tried during the reflection-in-action, but we also engaged in reflection on another situation during her lesson that she could improve on. For example, I first introduced the topic of how she introduced the sentence frames to the ELLs to reflect on, had her describe how she introduced them to Edith and Edgar, we compared the introductions, and then thought through the differences and what she could do to make the introductions stronger. Unlike both Laura and Katie, Tyler's session only consisted of reflecting on a situation during his lesson that was not reflected on during the lesson. We did not begin his instructional sequence by summarizing the reflection-in-action interactions. This is because when I asked Tyler about his lesson, he went straight into identifying two new problems that we had not thought through previously, and so I worked off of what he brought up. When I analyzed his session at the end of cycle two, I realized I had room for improvement which led to Emily's session in the last cycle to be much longer and more in-depth. Like Tyler's session, when I asked Emily how her lesson went, she identified a problem

that we did not previously reflect on, so we jumped right into identifying the problem and possible solutions. After we identified the problem, I then asked Emily how her lesson went, and we summarized the reflection that occurred during the lesson. Unlike during Laura and Katie's session, I used this time to relate the challenges reflected on before her lesson, revisiting occurrences of when the challenge occurred during the lesson, and finished reflecting after the lesson. I describe how this reflective conversation was carried through from before the lesson to after the lesson when I discuss the reflective unit at the end of this chapter. Lastly, I ended revisiting her lesson by bringing up another situation during her lesson, identifying the pros and cons of the situation, and how she might change the situation in the future.

After summarizing the reflective interactions that occurred and further reflecting on situations that happened during their lesson, we then transitioned into the instructional sequence synthesizing what was learned. Synthesis is the process of taking what was analyzed from their unique lesson and transferring what they learned from it into a more general context of using sentence frames with ELLs. Synthesis is important because it provides the opportunity for the preservice teacher to summarize what they learned in this one experience and relate it to future teaching experiences when they use sentence frames with ELLs. Table 16 shows the interactions that occurred during the instructional sequence of synthesizing what was learned, the preservice teachers who engaged in these interactions, and an example of each interaction from one of the lessons.

Table 16

*Interactions Leading to Synthesis*

| Reflective element | Interactions  | Preservice teacher         | Example  |
|--------------------|---|----------------------------|--|
| Synthesis          | TE informing PST on the importance of synthesis                 | Katie                      | TE: well before we end this session um it's really important to think about how you can use this experience and what you've learned from it to apply it to future experiences with ELLs and synthesize that so I'm actually going to put a sentence frame into the chat box<br>K: okay   |
|                    | TE providing a sentence frame to the PST to help with synthesis | Emily, Laura, Tyler        | L: yeah<br>TE: you're ready and so I'm gonna put I'm going to use a sentence frame sentence stem with you and I'm going to put it in the chat right now that way we can walk away with a better understanding of using these sentence frames and so the first blank we have lots of blanks when using sentence frames with either an EL 1 EL 3 or an ELL we'll choose it's important that the teacher does blank because and then what impact it has on student learning let's try to fill this in so  |
|                    | PST and TE filling in the sentence frame                        | Emily, Laura, Tyler, Katie | T: Okay when using something frames with EL 1s it's important that the teacher limit options because more options create a higher demand<br>TE: Wonderful so um that's perfect so you learned throughout this one that you can have you can start with the options that way if they do understand they're able to choose something but if they get kind of stuck then you're able to just focus on one   |
|                    | PST and TE describing the impact on student learning            | Laura                      | TE: and then um let's let's attach that to student learning so it's important that the teacher has scaffolding because what impact will that have for Edith or for an EL 1 in general<br>L: It will make sure that they are understanding what is being presented to them<br>TE: Perfect yeah so when using sentence frames with EL 1s it's important that the teacher has scaffolding like we talked about with pictures and with short language because then we can make sure that the student understands what's being presented that's perfect |

To prompt the preservice teachers to begin synthesizing what they learned, I informed them on the importance of synthesizing and then provided a sentence frame to support them as they

thought through what they learned. The sentence frame used was *When using sentence frames with \_\_\_\_\_ (L1s, L3s, ELLs) it is important that the teacher \_\_\_\_\_ because \_\_\_\_\_.*

The end blank was used for the preservice teachers to connect what they learned about sentence frames to their impact on student learning. Although not all of the preservice teachers received a separate interaction for each of these moments, every preservice teacher received the information. For example, Katie and I had a whole separate interaction on the importance of synthesizing, whereas the other preservice teachers, I combined the information into one statement in which I told them the importance of synthesizing, provided them the sentence frame, and we filled it in together. Upon reflecting on my delivery of this information, I believe having separate interactions for each of these moments is important as it helps to ensure the preservice teacher understands and allows for them to be more engaged in the interaction. After I explained why synthesizing was important and provided and modeled the sentence frame, the preservice teacher and I then filled in the sentence frame based on what they learned. When synthesizing what she learned from the session, Laura stated, “When using sentence frames with L1s, it is important that the teacher has scaffolding.” and she did not make the connection to how the scaffolding impacted student learning. I used a follow-up question to prompt Laura to focus on the impact the scaffolding would have on student learning, in which she filled in the last blank by stating it helps the L1s understand the content presented to them. As shown in Table 16, Laura was the only one to receive this extra interaction on student learning as the other three preservice teachers filled in all the blanks during the initial interaction of filling in the sentence frame. Each preservice teacher must be able to describe how what they learned about creating and using sentence frames with ELLs impacts student learning, so they understand that the

skillful creation and use of sentence frames do lead to ELLs of all proficiency levels being able to write for authentic purposes.

The phase unit ended with the instructional sequence ending the session in which I thanked the preservice teacher for their time and ended the interaction by saying goodbye.

### Reflection as a Unit

From this study, I investigated engaging in reflection as a unit consisting of reflection-for-action, reflection-in-action, and reflection-on-action to further support the preservice teachers in developing a professional understanding of creating and using sentence frames to support ELLs' writing. Only two preservice teachers, Katie and Emily, had instances in their session where the reflective conversation carried through from reflection-for-action to reflection-on-action. In both instances, there was an opportunity to reflect on the topic during reflection-in-action, but I missed the opportunity. Next, I describe the two sessions in more detail and share the reflective moves used to continue to carry the reflective conversation from reflection-for-action to reflection-on-action. Additionally, I describe ways in which the reflective conversation might be carried through to reflection-in-action.

#### Identifying Reflective Moves to Carry Reflection Through Reflection-for-action, Reflection-in-action, and Reflection-on-action

Katie's session was the first session in which the reflective conversation carried from reflection-for-action to reflection-on-action, however the connection was not made for the preservice teacher. As I reflected on my practice directly after Katie's simulation in my reflective

journal, I noted the missed opportunity to bring more awareness to the topic reflected on during reflection-for-action (illustrated in Table 17) to reflection-on-action (illustrated in Table 18).

*Thinking about the first session I realize I missed an opportunity of relating to the reflection for action. The preservice teacher had said eaten for may be confusing and hard and it was and became something we reflected on, however I did not strategically bring up the reflection for action conversation and the ways that were brainstormed to solve the problem. Quite honestly, I don't know if I know how to strategically do that. I definitely need to think about that more.*

Table 17

*Katie's Reflection-For-Action*

| Line | Speaker          | Transcript  | Analytic notes  |
|------|------------------|---|---|
| 1    | Katie            | and then um when I say that food is eaten for that could be confusing so just like the sentence itself um you know I probably could have put when is that food eaten that probably would have been better but | “and then um” – thinking, “when I say...” – identifies problem area |
| 2    | Teacher Educator | and you just thought of the solution so if they do start to struggle then you can use that language and reword um reword your sentence  | Reiterates solution provided  |
| 3    | Katie            | okay so it doesn't have to just be whatever is like on the paper  | Confirms, asks clarifying question                                  |
| 4    | Teacher Educator | no no you can you can stray away if you need to or if they need additional support things like that yep   | Answers, “stray away” “additional support” - examples               |
| 5    | Katie            | okay  | Confirms  |

In line one, Katie shared her concerns with the structure of the sentence frames she created when she stated, “when I say that food is eaten for that could be confusing” and provided a solution “I probably could have put when is that food eaten.” Although her updated frame had an easier sentence structure with “food eaten” as compared to “food is eaten for,” it was stated as a question with the word “when” rather than a statement. Then, in line two, I reiterated that Katie



provided a solution to the possible problem in which she could “reword your sentence” if the problem arose during her lesson. Katie responded in line three with a clarifying question ensuring she did not have to use “whatever is like on the paper,” referring to the sentence frames she created prior to the lesson. I further explained in line four that Katie could “stray away” or “provide additional support” and did not have to use exactly what she planned. Katie ended the interaction in line five by confirming with “okay.”

As Katie reflected-for-action, she described that her sentence frame *That food is eaten for \_\_\_\_\_* could be confusing and came up with the solution to reword the sentence if Edith got stuck, as visible through the analysis of the interaction represented in Table 17. Then, as Katie interacted with Edith using this sentence frame during her lesson, she came across the problem where Edith did not understand the sentence, and Katie adjusted her language to more align with Edith’s English proficiency level, as seen below.

Table 18

*Katie Interacting With Edith*

| Line | Speaker | Transcript   | Analytic notes   |
|------|---------|--|--|
| 1    | Katie   | good job I like to eat pizza great job Edith ( <i>pause</i> ) Edith do we eat food do we eat pizza for ( <i>points to each word as she reads the sentence word for word</i> ) this food is eaten for breakfast ( <i>points to picture and pauses</i> ) lunch ( <i>points to picture and pauses</i> ) or dinner ( <i>points to picture and pauses</i> ) | Positively praises, repeats L1, rewords question to statement, uses pictures |
| 2    | Edith   | que  | “que” - what   |
| 3    | Katie   | in the morning do you eat ( <i>gestures</i> ) it for breakfast ( <i>points to picture and pauses</i> ) or for lunch ( <i>points to picture and pauses</i> ) can you see the picture or dinner ( <i>points to picture and pauses</i> )  | Adds gestures, rewords to “do you eat it for”                                |
| 4    | Edith   | lunch  | Answers  |
| 5    | Katie   | lunch good job   | Repeats answer, praises  |

In line one, Katie praised Edith for filling in the sentence frame *I like to eat \_\_\_\_\_*. She then shifted to her next sentence frame and first asked Edith, “do we eat pizza for \_\_\_\_\_” but then reworded the sentence to the statement “this food is eaten for \_\_\_\_\_” and provided Edith with breakfast, lunch, and dinner as choices to choose from. Edith responded in line two with “que” or what in English, showing she did understand what Katie was asking. In line three, Katie then reworded the sentence to “do you eat it for ...” using a less complex structure and changed the verb from eaten to eat. Like in line one, Katie continued using pictures as a support and added gestures for the word eat. In line four, Edith provided the answer “lunch” to state when she likes to eat pizza. Katie then ended the interaction by repeating Edith’s answer and positively praised her but missed the opportunity to model reading the whole sentence.

As shown in the analysis of Table 18, Katie first used the sentence frame *this food is eaten for*, and when Edith did not understand, she simplified her language to *do you eat it for* by changing eaten to eat and using a less complex sentence structure. By simplifying the language and using visuals and gestures, Edith was able to fill in the blank with lunch. Katie also ran into a similar problem when she worked with Edgar using the sentence frame *I like to eat \_\_\_\_ for \_\_\_\_*. She provided an example of the sentence frame filled in for Edgar, but the structure was still too complex, and he did not understand how to fill in the second blank, so she ended up changing the sentence frame on the spot.

During the reflection-on-action (Table 19), Katie reflected on needing to be “more deliberate” when writing sentence frames by using different wording in her sentence frames to make the structure less confusing for ELLs at the beginning and intermediate proficiency levels.

Table 19

*Katie's Reflection-On-Action*

| Line | Speaker          | Transcript   | Analytic notes  |
|------|------------------|--|---|
| 1    | Teacher Educator | okay Katie so how do you think it went   | “so” – initiating topic   |
| 2    | Katie            | I think that it went well I I think that I should have picked a better um like verb not verbs um yeah I think verbs like I like to eat for kind of got tricky so maybe um having like a when would have been better or like at what time um I’m trying to have two blanks um but I feel like it just got it got a little confusing because like there’s so many different time there wasn’t like specific time for breakfast lunch or dinner like 4pm you know like it kind of got a little murky there. | Answers, “kind of got tricky” “confusing” “murky” – states problem, “maybe” – uncertain but provides solutions “when” or “at what time” |
| 3    | Teacher Educator | yeah and so um what are some things that I know you tried out some solutions what are some ways we could fix that um if it happens again   | Confirms, “so um” – initiates topic of solution   |
| 4    | Katie            | I think just um being more deliberate with my question writing and also um having some like choices like or examples like filled in examples would have been   | Provides three solutions  |

In line one, I initiated the topic of revisiting how the lesson went after the lesson was over. Katie responded that she thought “it went well” in line two but provided information on a problem she faced during her lesson. She stated that the wording of the sentence frame *I like to eat \_\_\_\_\_ for \_\_\_\_\_* was “kind of tricky,” “confusing,” and “murky” and that she would have liked to reword the sentence to “when” or “at what time” while still “trying to have two blanks” in the sentence. I confirmed her response in line three and followed up with the question “what are some ways we could fix that um if it happens again” to help synthesize what she learned. Katie, in line four, provided three solutions of “being more deliberate with my question writing,” “having some like choices,” and “filled in examples.” As shown in her first solution, Katie confused “question writing” with creating sentence frames for ELLs that support the ELL in writing sentences that are structurally and grammatically correct.

As shown in Tables 17, 18, and 19, Katie and I reflected on the issue that the sentence structure and wording of the sentence frames she created may be too complex and that she might need to make adjustments and additional accommodations for the ELLs as we reflected before her lesson. During her lesson, when Katie came across this problem, she was able to add appropriate accommodations and adjustments to the sentence frames to add additional support resulting in the ELLs successfully filling in the sentence frame. After her lesson, as she reflected on her teaching, Katie articulated the problems she faced during the lesson with her sentence frames and synthesized what she learned by explaining the need to be more deliberate as she writes sentence frames.

This was the first time a topic of reflection carried through from reflection-for-action to reflection-on-action; however, I did not strategically show Katie how when she reflected on potential problems and solutions before her lesson, she was able to smoothly solve these problems when they arose during her lesson, and then reflect on the same issue after her lesson to synthesize what she learned and apply it for future instances when she uses sentence frames with ELLs.

Noting this missed opportunity, I went into my last cycle of action research knowing a major improvement to my practice I wanted to focus on was to try carrying the reflective conversation through reflection-for-action, reflection-in-action, and reflection-on-action.

As I described in cycle three, during Emily's session, she reflected-for-action on how Edith might struggle with the English during the lesson, and she would solve this problem by using pictures. The challenge then arose during her first interaction with Edith, so we paused the simulation to identify multiple solutions to provide support in understanding the language;

however, I missed the opportunity to make the connection between the reflection that occurred before the lesson to the reflection that occurred during the lesson to help her clear up her misunderstanding that using pictures is enough support for an ELL at the level one proficiency level to comprehend oral and written language. I then outlined moves that could be made in the future to help connect the reflective conversation from reflection-for-action to reflection-in-action, as seen in Figure 3.

This section, presents the moves I made to connect the reflection that occurred during reflection-for-action and reflection-in-action to reflection-on-action. Within the phase unit of revisiting the lesson after the simulation, during the instructional sequence of revisiting the lesson, the three interactions that occurred were the preservice teacher and teacher educator revisiting if the pictures helped Edith, the preservice teacher and teacher educator revisiting when the pictures did not help Edith, and the preservice teacher and teacher educator identifying how to solve the problem. These three interactions helped me to continue the reflective conversation from reflection-for-action into reflection-on-action. Table 20 shows the conversation that occurred during these interactions.

Table 20

*Connecting Reflection-On-Action*

| Speaker          | Transcript  | Interaction   |
|------------------|---|---|
| Teacher Educator | now um I want us to think about something kind of interesting that happened so when we started let me find my notes so I can make sure I get it right when we started you were saying that Edith might struggle a little bit that was one of your concerns and you said that using a picture might help her and so I want us to think through when Edith struggled did the picture help Edith um during your lesson | PST and TE revisiting if the pictures helped Edith        |
| Emily            | I think it did the first sentence yes right off the bat but the last sentence seemed a little bit more difficult for her so I just try to let me see how can I put it I tried to keep the balance of using the pictures and not using the pictures so I think to the extent the pictures did help   |   |
| Teacher Educator | okay and then you kind of brought up in the first sentence with my favorite animal is and you held up the rabbit the picture helped but in the second one you're saying it didn't help kind of as much why could it have not helped as much   | PST and TE revisiting when the pictures didn't help Edith |
| Emily            | um just because she she got tired she was like to me she kind of zoned out a little bit   |   |
| Teacher Educator | okay and why might she have gotten tired or zoned out   |   |
| Emily            | it was just too long  |   |
| Teacher Educator | yea it was too long yeah so that's something to think about is when we know that pictures can help ELLs but a picture can't do everything so if we have too much language or we're using too much language the picture is not going to be enough  | PST and TE revisiting how to solve the problem            |
| Emily            | exactly   |   |
| Teacher Educator | so then what do we do if we have too much language and the picture is not working what was your solution  |   |
| Emily            | you shorten the sentence  |   |
| Teacher Educator | there you go you shorten the language wonderful perfect   |   |
| Emily            | yeah  |   |

To begin the interaction of revisiting if the pictures helped Edith, I first initiated the conversation by reminding Emily of our conversation during reflection-for-action. I then used the question, “Did the picture help Edith um during your lesson?” This led to Emily reflecting on when the pictures helped and when the pictures did not help. I wanted to focus our conversation on when the pictures did not help, so I followed up with the question, “In the second one you’re saying it didn’t help kind of as much why could it have not helped as much?” Emily responded

that Edith was zoned out and tired. I wanted to support Emily in realizing what led to the problem, so I prompted Emily using the question, “Okay and why might she have gotten tired or zoned out?” to which she replied it was too long. Now that Emily had reflected on the problem, I used the question, “So what do we do if we have too much language and the picture is not working what is your solution?” in which she gave the solution of shortening the sentence.

By carrying the reflective conversation from reflection-for-action, to reflection-in-action, to reflection-on-action, I had hoped that it would support the preservice teacher as she synthesized what she learned into a professional understanding. At the end of the phase unit, I provided Emily with a sentence frame to guide her as she synthesized. Emily’s initial professional understanding was, “When using sentence frames with EL ones it is important that the teacher speak slowly because students are comprehending and also learning the language.” I wanted to help focus her professional understanding on the reflective conversations we had before, during, and after the simulation, so I used the follow-up question, “Yeah and what else did you do besides just speak slowly.” to which she responded, “Uh shortened the sentences.”

As shown through these interactions, even after reflecting on the idea of pictures not being enough support for ELLs and that they need less oral and written language surrounding the use of the picture, Emily still responded with speaking slowly. Interestingly, the only time we discussed speaking slowly was for one of her solutions to the problem of which she chose to shorten the language and speak more slowly. This finding is important as it shows that reflecting on a similar topic during reflection for and on action does not necessarily mean the preservice teacher will synthesize and develop a professional understanding related to the conversation.



### Summary

The findings from the current study were presented in this chapter. To answer the research question on how a teacher educator engages elementary preservice teachers in joint reflection on using sentence frames to support ELL's writing, the following findings were described a) the improvements made to my practice of using joint reflection through each cycle, b) the instructional maps of the interactions including the elements of reflection and what led to them occurring or not, and c) my first attempts at engaging in reflection as a unit consisting of reflection for, in, and on practice to support the preservice teachers' development of a professional understanding. In the next chapter, I describe the implications of these findings for practice and the need for future research.

## CHAPTER FIVE: DISCUSSION

This study explored how I, as a teacher educator, engaged elementary preservice teachers in joint reflection during an approximation of practice in TeachLivE™ to develop a professional understanding of using sentence frames to support ELLs' writing. This chapter presents a summary and discussion of the study's findings followed by implications for teacher educators. The chapter ends with limitations and recommendations for future research.

### Discussion of Findings

The research question that guided this study was *how do a teacher educator and elementary preservice teachers engage in joint reflection during an approximation of practice in a TeachLivE™ setting to develop professional understanding of using sentence frames to support ELLs' writing?*. Findings from the analysis showed three major findings. First, the analysis led to the creation of instructional maps of the phase units, instructional sequences, and interactions that the teacher educator and preservice teachers engaged in during joint reflection before, during, and after the simulation. This finding illustrates the moves a teacher educator can make during reflection-for-action, reflection-in-action, and reflection-on-action to support reflection. Second, I was able to look more closely at how engaging in reflection as a unit consisting of reflection-for-action, reflection-in-action, and reflection-on-action within one session could further support reflection. Findings showed that the topic of reflection did carry through during two out of the four preservice teachers' interactions. This is an interesting finding, and shows there might be other reflective moves that a teacher educator can engage in to support the

preservice teacher in carrying the reflective conversation through reflection-for-action, reflection-in-action, and reflection-on-action. Lastly, upon examining my growth as a teacher educator engaging in joint reflection with a preservice teacher through three cycles of practice, I found that it might take considerable practice for a teacher educator to become skilled in supporting preservice teachers in reflection. A discussion for each of the findings is included next.

### Instructional Maps of Joint Reflection

Through instructional sequence analysis, I created instructional maps to describe the reflective moves used through the interactions, instructional sequences, and phase units between the teacher educator and preservice teacher during reflection. These findings add to the current literature on facilitating reflection with preservice teachers as most of the literature consists of using written reflection-on-action (Buck et al., 2010; Guillory, 2012; Parker et al., 2012; Schneider et al., 2012). Problematically, having course assignments that require preservice teachers to reflect independently is not likely to lead to reflection (Schneider et al., 2014). Although guiding questions and prompts have been found effective in supporting preservice teachers to reflect at a deeper level (Nesmith, 2011), reflecting collaboratively with a more knowledgeable other has shown to be more supportive as guidance can be provided on the reflective process and content knowledge (Prado et al., 2019; Saiz-Linares & Susinos, 2020).

Knowing that interactions with a knowledgeable other enhance the reflection of the preservice teachers, researchers must identify reflective moves that can be made to guide the joint reflection. Nevertheless, much of the research that has included joint reflection with a more

knowledgeable other did not include the role the more knowledgeable other played in supporting the reflection (Carter et al., 2016; Sagasta & Pedrosa, 2019; William, 2020). The findings of this study address this gap by showing the interactions between the preservice teacher and me, along with the language I used to support the preservice teachers through key components of reflection like dissonance, analysis, judgment, and synthesis. Importantly, when preservice teachers engage in reflection independently through written reflections, they do not experience these key components.

Within the following three sections, I further discuss the key findings of each phase unit that the preservice teacher and I engaged in during joint reflection throughout the simulation. The three phase units included interactions on the lesson prior to the simulation, interactions on the lesson during the simulation, and revisiting the lesson after the simulation. These three phase units align with reflection-for-action, reflection-in-action, and reflection-on-action.

#### Preservice Teachers May Need Time to Reflect on Their Lesson Plan and Sentence Frames During Reflection-For-Action

As operationalized in this study, reflection-for-action is a short pre-conference that occurs as close as possible to the actual teaching and involves the preservice teacher visualizing what they have planned and the challenges they might face (van Manen, 2015; Wetzel et al., 2017). There is minimal research on how teacher educators engage in reflection-for-action with preservice teachers, which further supported the need for my study. Reflection-for-action occurred in this study as I supported the preservice teachers through interactions on their lessons before the simulation. During this time, the preservice teacher and I engaged in introductions, describing the simulation, visualizing the preservice teacher's lesson, and further describing the simulation.

By engaging in conversations about their lesson, including identifying the challenges the ELLs might face and how they can solve these challenges, the preservice teachers developed a clearer understanding of how their lesson will go (van Manen, 2015; Wetzel et al., 2017). I hoped that by having the preservice teachers visualize their lesson, they would be more likely to notice the dissonance themselves during their lesson. However, I found over half of the time I was the one pausing the lesson and guiding the preservice teacher in noticing a problem. I believe I was the one pausing the simulation to stop and reflect for two reasons a) the preservice teacher might have been uncertain about the reflective process and b) the lesson was going as planned, so they did not notice the problem.

During the preservice teachers' lessons, there were moments where it seemed the preservice teacher could tell something was not going as planned during their lesson, but they did not pause the lesson to engage in joint reflection with me. For example, the level one ELL had trouble understanding the large amount of language the preservice teachers used during their lesson resulting in an extended period of time where Edith would shrug her shoulders, say "que," or remain quiet before I would pause the simulation. I predict that in these moments the preservice teachers noticed their lesson was not going as planned; however, they might not have known what to do about it. This finding might mean the preservice teachers need a more explicit description of what joint reflection is and how it will occur during the simulation. From their prior experiences, reflection is usually writing about their experiences and what they would change after their lesson is complete. To support the preservice teacher in better understanding what reflection is, the teacher educator needs to be much more explicit about the process and

purpose of reflection and how it is different from the other times they have engaged in written reflections as an assignment.

Additionally, there were times when the preservice teacher's lesson was going as planned, so they did not notice the problem that had occurred. For example, during Laura's lesson, she had Edgar, an intermediate ELL, fill in one word into the blanks of the sentence frame and repeat one word at a time. An intermediate ELL can produce expanded sentences using oral language (World-Class Instructional Design and Assessment Consortium, 2016); therefore, Edgar could produce and repeat one word quite easily. Due to Edgar completing the lesson, Laura did not notice that the lesson was too easy and not aligned with what an intermediate ELL can achieve.

To ensure the preservice teachers notice when their lesson does not align with what an ELL at each proficiency level can do it might be necessary to have the preservice teacher create a lesson plan of their lesson and then meet with the teacher educator ahead of time to reflect on their lesson plan. Although Wetzel et al. (2017) state that reflection-for-action should occur right before the preservice teacher teaches their lesson, I believe there may need to be additional reflection-for-action on their lesson plan about a week prior to their simulation. The teacher educator and preservice teacher can have the can do descriptors created by the World-Class Instructional Design and Assessment (WIDA) Consortium (2016) to support the reflection. Having the reflection-for-action a week prior rather than right before would provide time for the preservice teacher to make any necessary changes that emerge from the professional understandings on content and pedagogy they gain from the reflection on planning to use sentence frames to support ELLs' writing. The reflection-for-action time right before the simulation would then be more of a rehearsal and focus on visualizing the structure of the lesson.

Having the preservice teachers reflect before their session builds upon Chien's (2015) study in which the preservice teachers discussed their lesson plans with an expert teacher and revised their lesson plans before teaching the lesson. However, there was no information on how far in advance the discussion was to teaching the lesson and what the discussion consisted of. The framework for facilitating collaborative planning conversations and the decision-making tool for planning created by Gelfuso (2021) would be a good starting place for supporting preservice teachers to reflect-for-action on their lesson plans for using sentence frames with ELLs.

Furthermore, I noticed that by having the pre-conference directly before their simulation, there was more opportunity to describe the structure of their lesson and how they will actually use the sentence frames with the ELLs and less opportunity to talk about the creation of their sentence frames. For example, in Katie's pre-conference, she talked about the challenges the ELLs might face due to the sentence structure and wording being confusing. Although she shared about creating the sentence frames, during the simulation, when this problem arose, it was challenging for her to adjust the sentence wording because the sentence frame was printed out and could not be erased. In addition, three of the preservice teachers emailed me before the simulation asking for feedback on their sentence frames prior to their simulation. Based on these two experiences, I would add it might be helpful during the meeting with the preservice teacher on their lesson plan to engage in joint reflection focused on the creation of their sentence frames as well.

## Supporting Preservice Teachers' Reflection Through the Reflective Moves of Questioning and Informing During Reflection-In-Action

Reflection-in-action is the in-the-moment reflection that begins with identifying the problem followed by using background knowledge to analyze and use judgment to determine the best course of action (Dewey, 2018; van Manen, 2015). Reflection-in-action occurred as I supported the preservice teachers through interactions on their lessons during the simulation. During this time, the preservice teacher and I engaged in identifying how to support Edith and Edgar, described the lesson structure, and discussed how to use sentence frames with ELLs. Then, when something was not going as planned, the preservice teacher or I paused the lesson in order to jointly reflect on the problem and explore possible solutions (Dotger, 2015; Driver et al., 2018; Thompson et al., 2019).

There is limited research on reflection-in-action, and the literature that is available utilizes feedback as opposed to reflection (del Rosario, 2017; Stahl et al., 2018). Due to the limited amount of research on how teacher educators can support preservice teachers' reflection during reflection-in-action, I examined literature related to reflection-on-action to investigate how similar moves might support preservice teachers as they reflected-in-action. From the literature on reflection, many teacher educators use written reflections with prompts or guiding questions to help support the preservice teachers as they reflect on their teaching experiences (Davis et al., 2019; Harding & Hbaci; Hudson et al., 2019; Nesmith, 2011). For example, Nesmith (2011) found well-crafted questions supported the depth the preservice teachers achieved while reflecting-on-action. Findings from the current study add to this literature the questioning moves teacher educators can use during joint reflection with a preservice teacher as they reflect-in-action. The questioning moves used by myself as the teacher educator further supported the



preservice teacher in reflection to identify the problem, analyze the problem to identify multiple solutions, and then use judgment to identify the pros and cons of each solution to select the solution that would be best in the current situation.

Furthermore, Prado et al. (2019) examined how a more knowledgeable other can use specific moves to enhance the quality of the joint reflection and found the preservice teachers were able to come up with solutions to the problems they faced. The more knowledgeable other was then needed to provide dialogic assistance, clarification, and connect the solutions with the situation at hand. Similarly to the Prado et al. (2019) study, during the joint reflection interactions from the current study, the preservice teachers were able to contribute at least two solutions to a problem identified with prompting; however, the teacher educator was needed to provide more specifics in the application of the solution to their unique situation. When examining the interactions that occurred during reflection-in-action, an instructional sequence often included me informing the preservice teacher. For example, in Tyler's simulation, when identifying how to support Edith, I ended the interaction by informing the preservice teacher how to use less language with an ELL. This move resulted in me adding additional content knowledge on limiting the verbal language when using sentence frames with ELLs so he could more skillfully apply his solution of using less language with Edith.

Engaging in the strategic use of providing additional content knowledge is an important finding. Many times teacher educators shy away from engaging in telling or informing with preservice teachers as they want the preservice teacher to figure it out independently. Even as I analyzed the transcripts from this study, I initially thought that informing the preservice teacher was negative as it typically ended the joint reflection. However, as the literature has shown,

collaborative reflection with a more knowledgeable other enhances the reflection that occurs (Gelfuso & Dennis, 2014; Haughn et al., 2013; Kazemi et al., 2016; Saiz-Linares & Susinos-Rada, 2020) because the more knowledgeable other can provide the content knowledge and variety of experiences important to being a reflective practitioner (Schon, 1983). By utilizing the informing move during joint reflection, I provided the content knowledge and experience of creating and using sentence frames with ELLs, the literacy and language appropriate and inappropriate for ELLs at varying proficiency levels, and the pedagogy needed to support the preservice teachers. However, the move of informing did typically end the joint reflection between the preservice teacher and teacher educator. Therefore, it would be advisable for the teacher educator to use this move toward the end of reflection or to utilize a questioning move to restimulate the reflective conversation if not used at the end.

#### Using Video-Mediated Reflection to Increase Accuracy during Reflection-on-Action

Reflection-on-action is reflection that occurs after teaching to make sense of the teaching and walk away with new understandings about pedagogy (van Manen, 2015). Reflection-on-action occurred as I supported the preservice teacher in revisiting their lesson after the simulation to create a professional understanding of creating and using sentence frames with ELLs. During this time, the preservice teacher and I engaged in the instructional sequences of ending the simulation, revisiting the lesson, synthesizing what was learned, and ending the session.

Most of the literature on utilizing reflection with preservice teachers is on reflection-on-action either through written reflections with or without guiding prompts (Arrequin-Anderson & Allanis, 2017; Parker et al., 2012; Schneider et al., 2012) or through video-mediated reflection

(Haugan et al., 2013; Sagasta & Pedrosa, 2019; Vesterinen et al., 2014). Schneider et al. (2012), in their study using written reflection-on-action on the teaching decisions of the preservice teachers, found that requiring reflection as an assignment did not lead to reflective practice. Therefore, instead of implementing written reflective guiding questions, I utilized reflective questioning moves within the joint reflection to build upon the existing literature to show the reflective moves a teacher educator can use to engage in joint reflection with a preservice teacher directly after their lesson to help synthesize what they learned from the reflection that occurred. For example, researchers have used reflection-on-action to reflect on what they learned about teaching, what worked and did not work, what they would change, and the strategies they used (Hudson et al., 2019; Töman, 2017; Webster et al., 2019; Yu, 2016). Although I engaged in similar interactions with the preservice teacher to start our conversation to summarize the reflective conversations that had already occurred, I added interactions to support the preservice teacher in a key element of reflection, synthesis. To help guide the preservice teacher in synthesizing what they learned, I used the interactions of informing the preservice teacher of the importance of synthesis, providing a sentence frame to help with synthesis, and jointly filling in the sentence frame. By synthesizing what was learned during the simulation, the preservice teacher created a professional understanding of creating and using sentence frames for ELLs to use in future, similar situations.

A challenge I faced when reflecting-on-action with the preservice teacher directly after the lesson was trying to revisit a situation that occurred during the lesson that we did not pause the simulation for. When I tried to jointly reflect on the situation with the preservice teacher, I tried to situate the context by describing what occurred. The challenge was that I could not recall

exactly what the preservice teacher did and said at that moment. Similar challenges have been identified within the literature on reflection, in which there were differences between what actually occurred and what was reflected on when trying to go off of memory to reflect (Hsee & Hastie, 2006; Wirtz et al., 2003). When analyzing the transcripts from the interactions during this study, the reflection became vague and did not result in the type of reflection that a skilled reflective practitioner would engage in. To solve this problem, other researchers have used video-mediated reflection to view what actually occurred to ensure they are accurately reflecting on what occurred and to notice the more subtle moves the preservice teacher made within their lesson (Gelfuso, 2018; Miron et al., 2009). Therefore, it may be beneficial to have the preservice teacher summarize the reflection-in-action that occurred directly after the simulation and then use what they learned from it to support them as they synthesize. Then, a few days later, the preservice teacher and teacher educator could meet again to engage in video-mediated reflection-on-action in which the preservice teacher and teacher educator can view the video recording as they reflect on other moments of the lesson that were not already reflected on.

### Enlarging the Unit of Joint Reflection

The literature on examining reflection as a process with a more knowledgeable other has focused on either reflection-for-action (Chien, 2015) or reflection-on-action (Gelfuso, 2016; Gelfuso & Dennis, 2014; Jao et al., 2020; Sagasta & Pedrosa, 2019; Thompson et al., 2019). Very few researchers have looked at more than one (del Rosario, 2017; Wetzel et al., 2017), and there has been no research that has looked at all three and how they can be used as a reflective unit in an attempt to carry the reflective conversation throughout. Furthermore, some studies say

they engaged in reflection when they have not actually engaged in the type of reflection that Dewey (2018), Schon (1983), and van Manen (2015) have described.

This study adds to the literature on how a teacher educator can attempt to carry the reflective conversation from reflection-for-action, to reflection-in-action, and end with reflection-on-action. Out of the four preservice teachers who participated in this study, only two had the reflective conversation carry through from reflection-for-action to reflection-on-action. During both of the lessons, there was a missed opportunity to carry the reflection through reflection-in-action. For example, Katie articulated her concern that the sentence frames she created might be confusing for the ELLs, and she could solve this problem by rewording the sentence. During the lesson, when Katie began using the sentence frame with Edgar, she provided additional support by giving an example and providing verbal choices to fill in the blank. These additional supports were not successful, so Katie changed the wording of the sentence frame resulting in Edgar completing the sentence. After this interaction, it would have been a good place for me to pause the simulation to ensure Katie understood that the solution from her reflection-for-action solved the problem of the complex structure of the sentence frame.

Although a key finding of this study is the reflective moves that carried the conversation from reflection-for-action to reflection-on-action, it is important to note that the preservice teacher did not initially create a professional understanding from the reflection. For instance, even after reflecting on the importance of creating sentence frames using sentence structures appropriate for the language proficiency of the ELL during reflection-for-action and reflection-on-action, Katie's professional understanding that she created at the end related to the importance of echo and choral reading of the sentence frames for the ELL to practice the

language. While a true statement, Katie did not walk away with a professional understanding from the focus of the reflection that occurred relating to creating appropriately leveled sentence frames. The teacher educator was needed to support the preservice teacher in synthesizing what was learned from the reflection-for-action and the reflection-on-action. Therefore, research is needed to see if the reflective conversation is carried through all three components of reflection-for-action, reflection-in-action, and reflection-on-action if the preservice teacher would more successfully synthesize what they learned. If it does, the reflective moves that the teacher educator uses to support preservice teachers' reflection throughout the three would be important to identify and build upon so the preservice teacher actually engages in reflection and becomes a reflective practitioner.

#### Supporting Preservice Teachers in Reflection Takes Considerable Skill and Knowledge of the Reflective Process and the Content Reflected On

Skillfully supporting preservice teachers through joint reflection takes considerable skill as the teacher educator must be knowledgeable in both engaging in joint reflection and the content reflected on (Dennis et al., 2018). For example, prior to this study, I had opportunities to observe another professor skillfully engage in joint reflection with preservice teachers and then try it out with her support. Additionally, I did a pilot study in which I practiced engaging in joint reflection with two preservice teachers as they used sentence frames with ELLs. I have now completed three more cycles of action research in which I have studied my practice of engaging in joint reflection with preservice teachers to enhance my practice. Although my practice has significantly improved from the beginning, there is still room for growth. I have considerable expertise in using sentence frames to support ELLs as they write; therefore, I have the content

knowledge to serve as a knowledgeable other when reflecting on using sentence frames to support ELLs' writing. However, even with expertise in the content knowledge, I was not always able to skillfully support preservice teachers in joint reflection due to my limited knowledge of the reflective process and experiences in engaging in joint reflection with preservice teachers.

An important factor in the growth of my pedagogical knowledge and skills in utilizing joint reflection with preservice teachers was the collaboration I had with a professor who is experienced and knowledgeable in reflection from her research in facilitating reflection with preservice teachers. The benefits and need for novice teacher educators learning with expert teacher educators to develop their pedagogical skill are documented in the literature (Cochran-Smith, 2003; Loughran, 2014). However, even with these findings, many novice teacher educators and doctoral students do not get the mentorship necessary (Butler et al., 2014; Yuan, 2015).

The considerable amount of time, practice, and collaboration with a more knowledgeable other that is needed to become skilled in supporting preservice teachers through reflection is an extremely important finding. Just because a teacher educator is a reflective practitioner themselves, does not mean they can skillfully support preservice teachers as they learn to reflect on their own practice. This is because the teacher educator must understand the different elements of reflection and then know how to use strategic pedagogical moves to guide the preservice teacher as they reflect on their teaching.

### Limitations

Four major limitations align with this study: researcher bias, the duration of the study, transferability, and methodological challenges.

Researcher bias had the potential to impact the design and analysis of this study. By using an action research approach, I was a key participant in the study and engaged in analyzing the data. I am aware that by having this large of a role in the study that my biases, judgments, and beliefs can impact the design and analysis. I took precautions to be reflexive of my own biases through two methods of bracketing, reflective journaling throughout the study, and analytic memoing during analysis. The ways in which I engaged in reflective journaling and analytic memoing were discussed in Chapter Three.

The duration of the study was a constraint that impacted the design of the research. Due to the duration of the study being one semester, a sample size of four participants was utilized to ensure the fine-grain analysis of the qualitative data could occur. A small sample size is typical of qualitative research because the purpose is to describe or understand a situation, context, or group of people in detail (Creswell & Poth, 2018).

Due to the limited sample size and the context-specific nature of this study, the ability to transfer the findings could be challenging. By providing a very detailed record of the context, participants, and procedures, other researchers may determine if applying these findings to their context is appropriate.

Additionally, I experienced methodological challenges as I learned about instructional interaction analysis while planning for and enacting the study. My first challenge was aligning an appropriate analysis based on the research question, purpose of the study, and data collected. I



first read the literature on discourse analysis and conversation analysis before reading Green and Wallat's (1981) chapter on mapping instructional conversations. To further understand action units, interactions, instructional sequences, and phase units, I read through multiple studies in Kelly and Green's (2019) book to see how the researchers utilized each with the data they collected. After reading through the literature, I applied the instructional interaction analysis to my first cycle of data and met with a professor who has experience in the analysis to gain feedback to update the analysis before engaging in the second cycle of action research.

After completing the analysis, I then faced further challenges in thinking through how to organize and present all of the data I had analyzed in a visible and audible way for the reader. It took several attempts at organizing and reorganizing the data, alongside conversations with other professors, to organize the data clearly and answer the research question of the study. Thus, although I learned a lot about instructional interaction analysis from this study, I still need further learning and practice in this analysis alongside other researchers who are more knowledgeable in mapping instructional conversations to further facilitate my learning.

### Implications for Practice

The turn to practice movement has shifted teacher preparation to focus on core practices that maintain the complexity of teaching while preservice teachers learn to skillfully enact the practice (Ball & Foran, 2009; Grossman et al., 2018). One such core practice is providing accommodations for language learning, focusing on "the range of strategies and supports that a teacher might use to make a lesson accessible to non-native English speakers or native speakers struggling to develop ELA skills" (Grossman et al., 2009, p.176). Creating and using sentence

frames to scaffold ELLs' writing is a strategy that can be embedded within the practice of providing accommodations for language learning in teacher education (Lucas et al., 2008; Villegas et al., 2018; Yough, 2019).

When supporting ELLs' language and literacy learning through sentence frames, it is vital that the preservice or in-service teacher skillfully support the ELLs' oral language, reading, and writing development as all three are interconnected. This means the ELL must be able to read and understand the content of the sentence frame and use their oral language to produce how they would like to fill in the sentence frames before they engage in the actual writing. For example, the preservice teachers in this study first read the sentence frames to the ELL before having them produce their ideas orally. While the ELL shared their ideas, the preservice teacher helped form their ideas grammatically and structurally before writing the ideas within the frame. After the sentence frames were completed, the preservice teacher and ELL then read the completed sentences. Depending on the ELL's proficiency level, the ELL either read the completed sentence independently or had additional support through echo or choral reading.

For preservice teachers to skillfully create and use sentence frames with ELLs, they must have multiple opportunities to approximate the practice (Lucas et al., 2018). Providing instruction and one opportunity to practice has shown not to be enough from this study. Instead, preservice teachers need adequate time to learn the content and pedagogical knowledge related to ELLs' literacy and linguistic needs, practice what they learned, reflect on their learning, and then be able to try again (Bunch, 2013). One such way to ensure preservice teachers are getting multiple opportunities to practice creating and using sentence frames with ELLs in an

environment created for learning is to add TeachLivE™ or another mixed reality simulation to teacher preparation courses rather than just having observation hours in the field.

In addition to adding approximations of practice to teacher preparation courses, further programmatic changes need to occur to ensure preservice teachers have a strong foundation in the knowledge needed to create differentiated sentence frames for ELLs of all proficiency levels and then skillfully provide instruction using them. Preservice teachers have several misunderstandings or challenges when it comes to supporting ELLs and using specific scaffolds for an ELL in a certain situation (Zhang & Stephens, 2013). For example, they might believe simply providing sentence frames will be enough for ELLs to participate in a writing activity and having visuals will be enough support for ELLs to comprehend the oral and written language. These misunderstandings may be occurring because the preservice teachers learning of strategies and supports for ELLs is surface level. For example, teacher educators have assignments that include listing ELL accommodations at the end of a lesson plan. Instead, time needs to be devoted to teaching preservice teachers to identify the language demands of tasks within the lesson plan and the student's English language proficiency to determine the challenges that might arise and how best to support those challenges. After planning, the preservice teachers then need multiple opportunities to actually create and use the supports they planned for.

Providing multiple opportunities to practice using strategies and supports like creating and using sentence frames is not enough. Preservice teachers need a more knowledgeable other to help the preservice teacher reflect-for-action, in-action, and on-action (Prado et al., 2019; Saiz-Linares & Susinos-Rada, 2020). However, as seen in the literature on reflection, most teacher educators use written reflections on action rather than engaging in reflection as a process in

which the preservice teacher and teacher educator jointly reflect. As this study has shown, teacher educators need a lot of practice engaging in joint reflection with a preservice teacher because it takes deep knowledge of reflection and the content reflected on. Just having the knowledge is still not enough though. A teacher educator must be able to apply this knowledge to unique situations during the preservice teachers' lessons. Therefore, just like preservice teachers need multiple opportunities to practice new skills they are learning, teacher educators will also need lots of practice with a more knowledgeable other to become skilled in using joint reflection.

Just as a teacher educator needs a strong foundation in understanding the reflective process, the preservice teachers also need to be metacognitive on the reflective process in order for them to learn from their experiences. For one, it is vital that the preservice teacher understand that dissonance does not mean failure but instead opens the doors to cognitive development and learning which comes from the reflective process. For example, as I tried to engage in joint reflection with Tyler during his lesson, there were times when he would jump back into his teaching without engaging in joint reflection first. A major reason for this might be that I did not clearly explain the reflective process to him before his lesson. Therefore, he might not have understood that when he or I paused that lesson, we would together work to identify the problem and the cause of the problem before coming up with possible solutions. Therefore, it may be beneficial for the teacher educator to further develop the preservice teachers' metacognition of the reflective process by modeling metacognitive pedagogy and incorporating it throughout their courses.

Finally, reflection needs to be collaborative. Preservice teachers, in-service teachers, and teacher educators all benefit from jointly reflecting with a more knowledgeable other in order to engage in reflection. Schon (1983) describes reflective practitioners as an expert in teaching and having a variety of experiences that can be applied to new situations to better understand them. As shown from this study, the preservice teachers had limited professional experiences with teaching and a novice understanding of using sentence frames with ELLs; therefore, they needed a more knowledgeable other to search for information to identify solutions to the dissonance they faced. Even veteran teachers benefit from jointly reflecting with literacy coaches or specialists because the situation being reflected on is new. By collaborating on the situation with a literacy coach or specialist, they may be able to share their experiences or knowledge related to the dissonance to provide the veteran teacher support through analysis, judgment, and synthesis so a professional understanding is achieved that can be applied in the future.

Consequently, I would argue there need to be opportunities in place for teachers to jointly reflect on their teaching with literacy coaches, mentor teachers, or other veteran teachers. For example, the joint reflection could take place once a week during the team's planning time in which teachers can share a situation they have experienced so they can collaborate with the coach and other teachers on the team. Additionally, it might be beneficial to utilize time during school-wide professional developments to explicitly teach and model the reflective process so the joint reflection will be more likely to occur during the planning meetings.

### Recommendations for Future Research

This study utilized reflection-for-action, reflection-in-action, and reflection-on-action within one session. It may be beneficial to research engaging in reflection-for-action about a week prior to reflect on creating the sentence frames and the lesson plan with the preservice teacher so they can make any edits needed and then focus the reflection-for-action right before the lesson on using the sentence frames. Additionally, engaging in reflection-on-action a few days later using video-mediated reflection may also provide beneficial insight into supporting preservice teachers in reflection and learning how to create and use sentence frames for ELLs.

The findings from this study showed there was evidence of the topic of reflection carrying through the reflective unit of reflection-for-action to reflection-on-action. Additional investigation is still needed to see what moves can be made by the teacher educator to guide the reflection so that the topic reflected continues to build and strengthen throughout the reflective unit. It would also be helpful to determine if having the reflective conversation carry throughout reflection for, in, and on action actually supports the preservice teacher in reflecting and developing professional understandings.

There were several moments during this study in which the preservice teachers may have not fully understood the reflective process. This was evident as the preservice teachers did not frequently pause the lesson to ask for help from the teacher educator. Additionally, during Tyler's lesson, he seemed to not know how joint reflection would go after the lesson was paused, as shown by him continuing his lesson without jointly reflecting on the possible problem and solutions. Better understanding the role metacognition plays for the preservice teacher as they engage in reflection, as well as the conditions necessary for preservice teachers to be

metacognitive and apply what they know about metacognition to their teaching would be beneficial to further investigate. These findings would help support teacher educators in developing the preservice teachers' metacognition of the reflective process and supporting their reflection as a whole.

The participants of this study only had one session in the TeachLivE™ simulation. Further research is needed to see if having multiple sessions would benefit the preservice teachers in their ability to create and use sentence frames with ELLs and their ability to reflect. In addition, it would be valuable to know about how many sessions preservice teachers need to develop their pedagogical skill in creating and using sentence frames with ELLs. Although the number of sessions may vary for each preservice teacher, having an approximation of the number of sessions needed would be helpful for teacher educators as they plan their courses and schedule the sessions.

Although some research has explored the transfer of the learned skill into the classroom for in-service teachers (Dawson & Lignugaris, 2017; Dieker et al., 2017; Dieker et al., 2019), research has not investigated the transfer of the learned skill for preservice teachers. Therefore, it would be important to research preservice teachers' ability to transfer what they have learned about creating and using sentence frames into the classroom. In addition to exploring the transfer of the content skill, research is needed on the preservice teachers' ability to transfer the reflective practices they learned from the joint reflection to their practice as a reflective practitioner.

Sampling from other populations would also be a necessary next step for future research. For example, this study could extend to in-service teachers, preservice or in-service teachers who

speak more than one language, and preservice teachers from other majors besides elementary education.

Capturing the preservice teachers' perspectives on the joint reflection with the teacher educator would be useful in order to see what they say regarding the reflection. Interview questions like *tell me about the interactions you had with the teacher educator, how did these interactions support your learning, and how did these interactions hinder your learning* could be used. Likewise, gaining the preservice teachers' perspectives in relation to using TeachLivE™, working with the ELL avatars, and creating and using the sentence frames to support the ELLs' literacy and language skills would be advantageous.

Lastly, due to the limited research on ways to support preservice teachers as they learn to create and use sentence frames with ELLs, it would be favorable to further research other assignments, activities, and opportunities that could be provided for preservice teachers as they develop pedagogical skill in creating and using sentence frames.

### Summary

The purpose of this study was to explore how I, as a teacher educator, engaged elementary preservice teachers in joint reflection during an approximation of practice in TeachLivE™ to develop a professional understanding of using sentence frames to support ELLs' writing. Findings from the instructional sequence analysis showed events maps of the phase units, instructional sequences, and interactions that the teacher educator and preservice teachers engaged in during joint reflection before, during, and after the simulation. Additionally, by engaging in instructional sequence analysis, I was able to look more closely at how engaging in



reflection as a unit consisting of reflection-for-action, reflection-in-action, and reflection-on-action within one simulation further supported reflection. Lastly, upon examining my growth as a teacher educator engaging in joint reflection with a preservice teacher through the three cycles of practice, I found that it might take considerable practice for a teacher educator to become skilled in supporting preservice teachers in reflection.

These findings contribute to the literature on skillfully using sentence frames with ELLs (Block, 2019; Donnelly & Roe, 2010; Tretter et al., 2014), using TeachLivE™ within teacher preparation courses to allow for opportunities for preservice teachers to engage in approximations of practice (Dieker et al., 2014; Murphy et al., 2018), and using joint reflection with preservice teachers to provide support as they develop professional understandings (del Rosario, 2017; Gelfuso, 2016; Wetzel et al., 2017). Due to the challenging writing demands in place by the Common Core State Standards (Common Core State Standards Initiative, 2010) and the low performance of ELLs in writing (National Assessment of Educational Progress, 2002, 2020), it is imperative that teacher educators provide opportunities for supported practice in a safe environment as they learn to create and use sentence frames with ELLs.

**APPENDIX A**  
**SUMMARY OF TEACHLIVE™ EMPIRICAL STUDIES**

| <b>Author</b>          | <b>Purpose</b>   | <b>Findings</b>   |
|------------------------|--|---|
| Battista & Boone, 2015 | Investigate impact of a mixed-reality environment on preservice teachers' science teaching self-efficacy   | Self-efficacy increased.  |
| Dawson et al., 2017    | Investigate effectiveness of simulation on inservice teachers' use of specific praise and error correction | Improved target skill and generalized on varying levels to real classroom.  |
| Dieker et al., 2017    | Investigate the effects of the simulator on teachers' math practices                                       | Teachers with reflection increased their math practice. Teachers without reflection did not.  |
| Dieker et al., 2019    | Impact of TeachLivE on inservice secondary science teachers' discourse                                     | Teachers with feedback showed significant growth while teachers without feedback did not. Teachers transferred learning to real classrooms.         |
| Kelley & Wenzel, 2018  | Investigate preservice teachers' effectiveness in conducting a parent-teacher conference                   | 62% completed the simulation successfully while 38% set goals and completed another simulation. Preservice teachers felt the feedback was critical. |

**APPENDIX B**  
**SUMMARY OF REFLECTION EMPIRICAL STUDIES**

| <b>Author</b>  | <b>Type of Reflection</b>  | <b>Reflected on</b>  | <b>Findings</b>   |
|--|--|--|---|
| Ajayi, 2014  | Process with peers,<br>Reflection-on-action  | Analysis was more on<br>written reflections  | Preservice teachers<br>developed skills to link<br>instruction to their<br>community  |
| Al-Hassan et<br>al., 2012                              | Unstructured, Individual,<br>Written, Reflection-on-<br>action   | Experiences during<br>Kindergarten and<br>elementary placements  | (1) the narratives of PSTs<br>experiences, (2) difficulties<br>faced, (3) advantages of<br>experience   |
| Arrequin-<br>Anderson &<br>Allanis, 2017               | Unstructured, Individual,<br>Written, Reflection-on-<br>action   | Reflection on their 5E<br>science lesson with both<br>experiences and teaching   | Positive response to<br>integrating collaborative<br>learning, combined<br>unstructured and semi-<br>structured strategies like<br>sentence stems |
| Arreguin-<br>Anderson &<br>Ruiz-<br>Escalante,<br>2018 | Unstructured, Individual,<br>Written, Reflection-on-<br>action   | Experiences using<br>cultural tool   | PSTs expressed advantages<br>of using culturally<br>responsive tools to<br>introduce and summarize<br>science concepts                            |
| Bennett, 2013  | Structured, Individual,<br>Written, Reflection-on-<br>action   | Experiences of field<br>placement  | Increased understanding of<br>culturally responsive<br>teaching and the effective<br>and ineffective components<br>to the experience              |
| Branscombe<br>& Schneider,<br>2013                     | Process with peers,<br>Reflection-on-action  | Reflections on field<br>experiences  | Students were engaged in<br>the reflective process<br>through tableaux<br>development and sharing   |
| Brown &<br>Moyer-<br>Packenham,<br>2012                | Structured, Individual,<br>Written, Reflection-on-<br>action   | Experiences of math field<br>placement   | Reflected on adapting to<br>teaching structures and<br>preparing for a math<br>classroom  |
| Buck et al.,<br>2010                                   | Unstructured, Individual,<br>Written, Reflection-on-<br>action   | Challenges that occurred<br>while teaching   | PSTs' reflections<br>demonstrated lack of<br>knowledge of formative<br>assessments  |
| Carter et al.,<br>2016                                 | Process, group with peers<br>and university coordinator<br>(focused on peers),<br>Reflection-on-action | Focused on interpreting<br>and responding to student<br>thinking   | Greatest improvements was<br>in interpreting student<br>thinking  |
| Chien, 2015  | Process, Reflection-for-<br>action, Reflection-on-<br>action, Secondary                                | Discussed the lesson<br>plans and revised;<br>debriefed on the lesson.<br>Analysis focused on<br>written reflection on | Built relationships and had<br>a positive attitude toward<br>their teachers, liked the<br>mentoring experience,<br>learned about their            |

| <b>Author</b>          | <b>Type of Reflection</b>   | <b>Reflected on</b>  | <b>Findings</b>  |
|------------------------|---|--|--|
|                        |   | mentoring and not reflective process   | strengths and weaknesses in teaching   |
| Davis et al., 2019     | Structured, Individual, Written, Reflection-on-action   | Planning and teaching decisions  | The types of the decisions made and not so much the effectiveness of the decisions   |
| Guillory, 2012         | Unstructured, Individual, Written, Reflection-on-action   | Experiences tutoring culturally and linguistically diverse students                      | Changes in PSTs' perception of ELLs and the impact of their assumptions and stereotypes  |
| Haberlin et al., 2019  | Unstructured, Individual, Written, Reflection-on-action   | Teaching beliefs   | Reflection through layers of teacher identity  |
| Hallman-Thrasher, 2017 | Unstructured, Individual, Written, Reflection-on-action   | Teaching and what they learned about teaching  | Reflection used to confirm/disconfirm findings   |
| Har, 2011              | Structured, Individual, Written, Reflection-on-action   | Aims of education and the environment. Reflected on experiences.                         | Conceptual, pedagogical, and political dilemmas in using new teaching initiatives in a school  |
| Harding & Hbaci, 2015  | Structured, Individual, Written, Reflection-on-action   | The teaching of a math lesson  | Reflected on effectiveness of integrating inquiry, student engagement, scaffolding content, classroom management, and assessment                   |
| Haugan et al., 2013    | Process with more knowledgeable other, Reflection-on-action   | Reflected on methodological matters, the environment, and the content they were teaching | PSTs struggled with reflecting on the content of the teaching. Large difference between reflections in guidance sessions and their individual logs |
| Hoffman et al., 2018   | Unstructured, Individual, Written, Reflection-on-action<br>(included 15 min debrief but did not provide info) | Literacy experiences in the tutorial   | Statements about growth and confidence, the learning of the PST, features of the tutorial, and looking forward/looking back                        |
| Hudson et al., 2019    | Structured, Individual, Written, Reflection-on-action   | Reflection on what went well and what could be changed based on their teaching           | Valued the mixed-reality experience and found benefits in practicing classroom management  |
| Kinskey, 2018          | Structured, Individual, Written, Reflection-on-action   | Feelings and experiences of action research  | Positive mastery experiences, the barriers faced and their negative  |

| <b>Author</b>              | <b>Type of Reflection</b>  | <b>Reflected on</b>   | <b>Findings</b>  |
|----------------------------|--|---|--|
|                            |  |   | effects on science teaching self-efficacy  |
| Kondor et al., 2019        | Structured, Individual, Written, Reflection-on-action  | Fortuitous interactions and cultural competency                                   | The experience plus reflection created an environment for fortuitous development and cultural competency.                            |
| Kurz & Kokic, 2011         | Structured, Individual, Written, Reflection-on-action  | How children learn math   | Adjustment of activities is necessary for students, use higher level questioning, manipulative and visuals offer support to students |
| Malandrakis, 2018          | Process, Reflection-on-action, Secondary Source  | Unsure – possible about science teaching self-efficacy                            | Reflection was second greatest factor to have effect on student teacher's confidence   |
| Malewski et al., 2012      | Process, Reflection-on-action  | Debriefing sessions but on their experiences in the international field placement | Developed cross cultural awareness   |
| Mosley Wetzal et al., 2016 | Unstructured, Individual, Written, Reflection-on-action                                      | Own literacy  | PSTs grew to value students' literacies and understand the importance of relationships   |
| Nesmith, 2011              | Structured, Individual, Written, Reflection-on-action  | Decision made during teaching   | Well crafted questions support the depth of reflection from PSTs   |
| Paquette & Laverick, 2017  | Unstructured, Individual, Written, Reflection-on-action                                      | Perceptions of tutoring experiences   | The benefit of real-world experience and the disadvantages of time and more tutors than tutees                                       |
| Parker et al., 2012        | Structured, Individual, Written, Reflection-on-action (also periodic debriefing)             | Experiences and beliefs of co-teaching  | Developed understanding of co-teaching and the role of field experiences in connecting theory and practice.                          |
| Parker et al., 2014        | Structured, Individual, Written, Reflection-on-action (also responded to peers' reflections) | Experiences and beliefs co-teaching   | Reflected on topics related to inclusion, students with disabilities, and standardized testing                                       |
| Prado et al., 2019         | Process with whole group, Reflection-on-action   | Challenge situation from field placement  | Strategies more knowledgeable other can use to elicit higher quality reflection.   |

| <b>Author</b>                     | <b>Type of Reflection</b>  | <b>Reflected on</b>  | <b>Findings</b>  |
|-----------------------------------|--|--|--|
| Purnomo et al., 2016              | Structured, Individual, Written, Reflection-on-action                      | Process of teaching math   | Beliefs about the nature of math and teaching/learning math  |
| Sagasta & Pedrosa, 2019           | Process with more knowledgeable other, Reflection-on-action                | Reflection on video of lesson  | Thought about the perspectives of the students and their opportunities to learn. Fewer teachers reflected solely on the outcomes of their lesson or a routine.                         |
| Saiz-Linares & Susinos-Rada, 2020 | Process, group with peers and university coordinator, Reflection-on-action | Pedagogical concern to start the reflection and keep it focused        | Having a structured plan for reflection and rethinking the role of the supervisor to provide guidance and support. Collaboration transformed reflection more than written reflections. |
| Schneider et al., 2012            | Unstructured, Individual, Written, Reflection-on-action                    | Teaching decisions   | Requiring reflection as a course assignment was unlikely to cause reflective practice  |
| Seung et al., 2014                | Structured, Individual, Written, Reflection-on-action                      | Prompts were in relation to the six features of inquiry-based learning | Actual reflection more teacher-centered and on issues not related to teaching science  |
| Shelton et al., 2020              | Structured, Individual, Written, Reflection-on-action                      | Math teaching  | Increase confidence in teaching number concepts, growth in differentiation   |
| Töman, 2017                       | Structured, Individual, Written, Reflection-on-action                      | Reflected on planning, practice, and evaluation                        | Failed to explain sufficiently the relations between assessment and evaluation methods and the targets of the subject.   |
| Tsybulsky & Oz, 2019              | Unstructured, Individual, Written, Reflection-on-action                    | A summary of their experiences   | Reflected on their frustration, tension of new challenges, sense of accomplishment   |
| Vesterinen et al., 2014           | Process with more knowledgeable other, Reflection-on-action                | Reflection on teaching   | PSTs had trouble reflecting on the details of their teaching and the meanings  |
| Webster et al., 2019              | Structured, Individual, Written, Reflection-on-action                      | Teaching experiences   | Challenges in planning, classroom management, and lack of experience, the success of learning from   |



| <b>Author</b>       | <b>Type of Reflection</b>   | <b>Reflected on</b>  | <b>Findings</b>  |
|---------------------|---|--|--|
|                     |   |  | the experience, and learn about planning.  |
| Wetzel et al., 2017 | Process with supervising teacher, Reflection-for-action and Reflection-on-action                          | Reflection on goals, challenges, and visualizing the lesson. Reflection            | PST noticed particular points of their teaching. Mentor struggled to leave judgment out of reflection  |
| White, 2017         | Structured, Individual, Written, Reflection-on-action   | The value of the experience and what they learned                                  | PSTs felt more prepared for teaching in an urban setting   |
| William, 2020       | Process, group with peers and researcher (mostly peers), Reflection-on-action                             | Reflected on challenges in science teaching  | Reflection framed the problem, reframed, but did not move into resolution.   |
| Yoon et al., 2012   | Unstructured, Individual, Written, Reflection-on-action<br>(discussed reflections as a whole class after) | Reflections on teaching their science lessons                                      | Challenges of developing children's ideas, guiding and scaffolding the children, incomplete understanding of hypothesis, and lack of confidence in science |
| Yu, 2016            | Structured, Individual, Written, Reflection-on-action   | Their teaching in regards to what worked, didn't work, and changes they would make | Developed professional skill, increased teaching confidence, and transformation of professional identity   |

**APPENDIX C**  
**EXPLANATION OF RESEARCH**



UNIVERSITY OF  
CENTRAL FLORIDA

## EXPLANATION OF RESEARCH

Title of Project: Engaging Elementary Preservice Teachers in Reflection For, In, and On Practice During an Approximation of Practice in TeachLivE™ using Sentence Frames for English Language Learners

Principal Investigator: Courtney Lopas

Other Investigators: Dr. Andrea Gelfuso; Dr. Vassiliki Zygouris-Coe

Faculty Supervisor: Dr. Vassiliki Zygouris-Coe; Dr. Andrea Gelfuso

You are being invited to take part in a research study. Whether you take part is up to you.

The purpose of this study is to examine the ways in which a teacher educator can support the reflection of preservice teachers before, during, and after a TeachLivE session using sentence frames to support English Language Learners' writing skills.

You are being asked to participate in this study because (a) you are a student at the University of Central Florida, (b) you are enrolled in Dr. McManus' Spring 2021 LAE 4314 course section (0001), (c) you are completing the MELTS skill 7 module on sentence frames and (d) you are an elementary education major. If you do not meet all of the qualifications listed above, you will not be able to participate in the pilot study. Course credit will be given for participants who complete the TeachLivE session. Should you not wish to participate, an alternative assignment of writing a lesson plan in which you use sentence frames with ELLs will be given to earn the course credit.

Should you decide to participate, you be asked to sign up for a 30 minute session of TeachLivE. Only one participant will be in the TeachLivE session at a time. You will complete a 30 minute TeachLivE session via Zoom using your sentence frames to write a paragraph with the avatars about the writing prompt. The first 5 minutes will be a pre-conference to discuss (a) what you expect to happen during the session, (b) any challenges you anticipate English Language Learners' might face with using sentence frames to guide their writing, and (c) how you plan to support any additional related needs of English Language Learners. You will then deliver a 15 minute lesson using the TeachLivE Avatars/Virtual classroom. During this lesson, I will provide in the moment reflection to support you. When the lesson is over, we will engage in reflection for action through a 10 minute post-conference to further reflect on the work we did and to hopefully walk away with a professional understanding about using sentence frames to support ELLs' writing skills. At a later date that works for you, you will complete a one-on-one semi-structured interview with me, the researcher, through Zoom to learn about your perspectives during the TeachLivE session you completed, including any positive or challenging experiences. You will also be asked to share your perspective about the interactions you had with the researcher, including how the interactions supported or hindered your learning, and any new insights and questions this experience might have created for you. The interview will be approximately fifteen to thirty minutes in length and take place through Zoom.

This study requires a video-recording of the 30 minute TeachLivE session and the one-on-one interview. If you do not wish to be video-recorded, you will not be able to be in this study. Please discuss this with the researcher. If you agree to be video-recorded, the recording will be kept in a locked, safe place and will be erased after five years.

Your created sentence frames, video-recorded TeachLive sessions, and video-recorded interviews will be collected and stored within a password protected UCF One Drive account. The only people who will have access to this data will be myself, Dr. Andrea Gelfuso, Dr. Vassiliki Zygoris-Coe, and Dr. Audra Skukauskaite. The data will be kept for five years and then it will be deleted.

Your participation in this study is voluntary. You are free to withdraw your consent and discontinue participation in this study at any time without prejudice or penalty. Your decision to participate or not participate in this study will in no way affect your relationship with UCF, including continued enrollment, course grades, employment or your relationship with the individuals who may have an interest in this study.

You must be 18 years of age or older to take part in this research study.

**Study contact for questions about the study or to report a problem:** If you have questions, concerns, or complaints: *Courtney Lopas, Graduate Student, School of Teacher Education, College of Community Innovation and Education, (407) 864-3954* or *Dr. Vassiliki Zygoris-Coe, Faculty Supervisor, School of Teacher Education at (407) 823-0386* or by email at [vassiliki.zygoris-coe@ucf.edu](mailto:vassiliki.zygoris-coe@ucf.edu) or *Dr. Andrea Gelfuso, Faculty Supervisor, School of Teacher Education, at [andrea.gefluso@ucf.edu](mailto:andrea.gefluso@ucf.edu)*.

**IRB contact about your rights in this study or to report a complaint:** If you have questions about your rights as a research participant, or have concerns about the conduct of this study, please contact Institutional Review Board (IRB), University of Central Florida, Office of Research, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901, or email [irb@ucf.edu](mailto:irb@ucf.edu).

**APPENDIX D**  
**UCF INSTITUTIONAL REVIEW BOARD APPROVAL**



UNIVERSITY OF CENTRAL FLORIDA

**Institutional Review Board**

FWA00000351  
IRB00001138, IRB00012110  
Office of Research  
12201 Research Parkway  
Orlando, FL 32826-3246

**EXEMPTION DETERMINATION**

January 15, 2021

Dear Courtney Lopas:

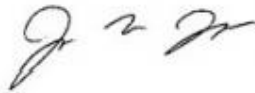
On 1/15/2021, the IRB determined the following submission to be human subjects research that is exempt from regulation:

|                     |   |
|---------------------|---|
| Type of Review:     | Initial Study, Category 1, 3(i)(B)  |
| Title:              | Engaging Elementary Preservice Teachers in Reflection For, In, and On Practice using Sentence Frames for English Learners   |
| Investigator:       | Courtney Lopas  |
| IRB ID:             | STUDY00002607   |
| Funding:            | Name: US Department of Education  |
| Grant ID:           |   |
| Documents Reviewed: | <ul style="list-style-type: none"><li>• HRP-251- FORM - Faculty Advisor Scientific-Scholarly Review fillable form.pdf, Category: Faculty Research Approval;</li><li>• HRP-254-Form Explanation of Research.pdf, Category: Consent Form;</li><li>• HRP-255-FORM - Request for Exemption - Spring 21.docx, Category: IRB Protocol;</li><li>• Interview Protocol.docx, Category: Interview / Focus Questions;</li><li>• LAE 4314.0001 McManus M Spring 2021 Syllabus.docx, Category: Other;</li><li>• Pilot Study - Transcripts and Codes.xlsx, Category: Other;</li></ul> |

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or [irb@ucf.edu](mailto:irb@ucf.edu). Please include your project title and IRB number in all correspondence with this office.

Sincerely,

A handwritten signature in black ink, appearing to read 'Racine Jacques', with a stylized flourish at the end.

Racine Jacques, Ph.D.  
Designated Reviewer

**APPENDIX E**  
**TEACHLIVE™ CONSENT FORM**



Recording Consent and Release Form

IRB file #: \_\_\_\_\_  
IRB approval date: \_\_\_\_\_

**TeachLive Consent for Recording for Research and Review**

Type of recording

Video and audio recordings of participant sessions in the TeachLive Lab.

Purpose of recording and dates

Observing and taking notes on behavior as it happens is difficult and prone to error. Video and audio recordings can be slowed, paused, replayed and evaluated by multiple researchers and participants. This allows researchers to gather more accurate data and allows a deeper reflective process for participants.

Dates of recorded sessions:

Confidentiality

The complete recordings must be kept confidential and destroyed at the end of the course of study. Complete recordings must be stored securely and only researchers/faculty can have access to the complete recordings. If researchers/faculty find it advantageous to retain a few still images and/or brief video and audio excerpts from some of the research sessions to illustrate findings when the results of this investigation are reported, it will be necessary to seek further consent from UCF TeachLive and the recorded interactor.

Permission

I, the undersigned interactor, hereby give TeachLive and Courtney Lopas permission to make a video and audio recording of the research/ course of study session I am participating in. As such, this consent is given with the understanding that the recording shall be utilized for research purposes only in the format of an After Action Review to be viewed in the presence of the professor or faculty member offering feedback concerning the TeachLive session or, for a limited time, available on a secure/ non-recordable on-line site that is monitored by the administering professor.

Statement of Consent:

I have read the above information and agree to the conditions outlined in this recording consent and release form. If any party involved in the research process is to violate this agreement, participant interactors and the University of Central Florida have full rights pursuant to the laws governing use of recorded material to seek restitution.

\_\_\_\_\_  
Name of Interactor (please print)

\_\_\_\_\_  
Signature of Interactor

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Researcher

\_\_\_\_\_  
Date

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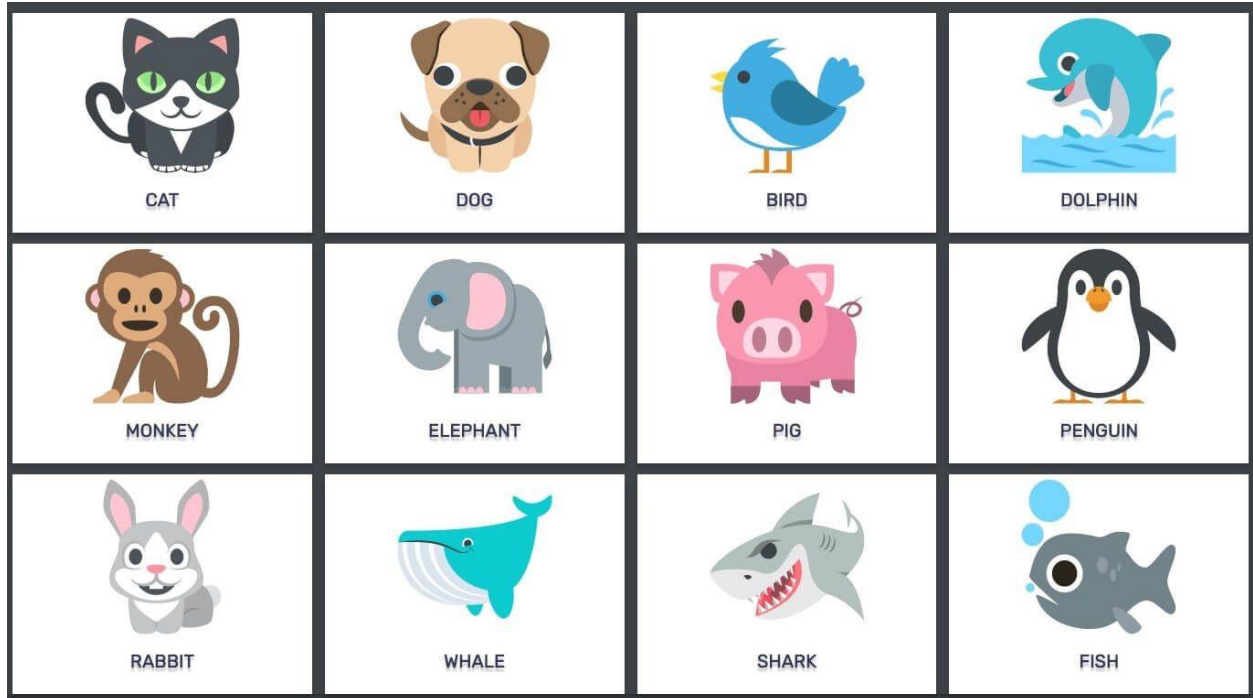
**APPENDIX F**  
**REFLECTIVE JOURNAL GUIDING QUESTIONS**

**Things to Think About:**

- ELLs
  - Was there reflection on both the level 1 and 3? Why or why not?
  - Was the focus more on one than the other? Why?
  - Did the PST leave the approximation with a better understanding of supporting ELLs' literacy/writing based on proficiency levels and need? How do you know?
- Sentence Frames
  - Was there reflection on creating the sentence frames to support ELLs literacy/writing skills? Why or why not?
  - What aspects/elements were reflected on? What were not? Why?
  - Was there reflection on using the sentence frames to support ELLs literacy/writing skills? Why or why not?
  - Did the PST leave the approximation with a better understanding on creating and using sentence frames to support ELLs literacy/writing skills? Why or why not?
- Reflection
  - Did the PST engage in dissonance, judgment, analysis, synthesis? How?
  - Was something left out? Why?
  - Was there similarity in what was reflected on throughout the reflection for, in, and on practice? Why?
- Wonderings
  - What worked?
  - What did not?
  - Frustrations?
  - Concerns?
  - Thoughts?
- Analyzing the Data
  - What are you noticing as you analyze the data?
  - What is missing in the data? Why? What needs to be changed so it is not?
  - Frustrations, concerns, thoughts as you analyze the data?

**APPENDIX G**  
**LAURA'S SENTENCE FRAMES**

My favorite animal is a \_\_\_\_\_.



I like \_\_\_\_\_ because \_\_\_\_\_.

\_\_\_\_\_ can \_\_\_\_\_.

They eat \_\_\_\_\_.

I think \_\_\_\_\_ are \_\_\_\_\_.

**APPENDIX H**  
**KATIE'S SENTENCE FRAMES**

I like to eat \_\_\_\_\_.

\_\_\_\_\_ is yummy.

I like to eat \_\_\_\_\_ for \_\_\_\_\_.

My favorite food is \_\_\_\_\_ because \_\_\_\_\_.

I like to eat \_\_\_\_\_.



waffle



Chicken and rice



pizza

That food is eaten for \_\_\_\_\_.



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Free Computer Generated Images

breakfast



lunch



dinner



**APPENDIX I**  
**TYLER'S SENTENCE FRAMES**

1. My favorite animal is a \_\_\_\_\_.



dog



lizard



bird



fish



cat

2. This animal eats \_\_\_\_\_.



meat



plants



bugs



seeds

3. It lives in\_\_\_\_\_.



house



tank



cage



bowl

4. In conclusion \_\_\_\_\_ is my favorite animal.



bird



lizard



dog



cat



fish

**Pick an animal.**

\_\_\_\_\_ is my favorite animal.

Example: Octopi are my favorite animal.

**Give three reasons.**

I like it because\_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. ( 3 parts)

Example: I like them because they are smart, have no bones, and can camouflage.

**Reason 1 and why....**

First \_\_\_\_\_because \_\_\_\_\_.

First octopi are smart because they can solve puzzles.

**Reason 2 and why...**

Next, \_\_\_\_\_because \_\_\_\_\_.

Example: Next, they have no bones because they are a cephalopod.

**Reason 3 and why...**

Last, \_\_\_\_\_because \_\_\_\_\_.

Last, octopi can camouflage because they can change color.

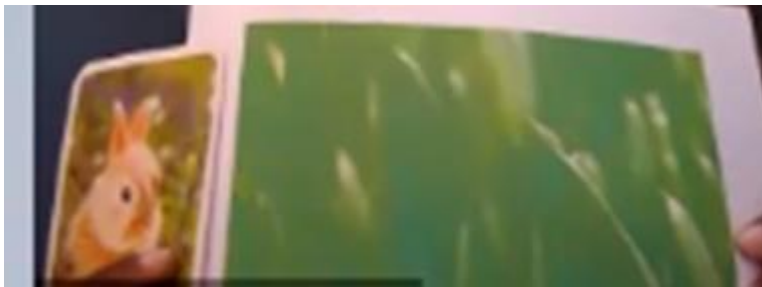
**Restate animal and reasons.**

In conclusion \_\_\_\_\_ is my favorite animal because \_\_\_\_\_,\_\_\_\_\_,  
and\_\_\_\_\_.

Example: In conclusion octopi are my favorite animal because they are smart, have no bones, and can camouflage.

**APPENDIX J**  
**EMILY'S SENTENCE FRAMES**

1. My favorite animal is a \_\_\_\_\_.
2. \_\_\_\_\_ is my favorite animal because they look \_\_\_\_\_.
3. \_\_\_\_\_ like to eat \_\_\_\_\_.





**APPENDIX K**  
**LAURA'S INSTRUCTIONAL MAP**

| Video Time      | Phase Units  | Video Time   | Instructional Sequence                         | Interaction Units   |  |
|-----------------|--|--|--|---|--|
| 48:10 - 51:32   | Interacting on the lesson prior to the simulation                    | 48:10 - 48:15  | Introductions                                  | TE and PST Welcome & Greeting                                   |  |
|                 |  | 48:16 - 48:56  | Describing the Simulation                      | TE describing the simulation to the PST                         |  |
|                 |  |  |  | TE describing how reflection will go to the PST                 |  |
|                 |  | 48:57 - 51:11  | Interacting on the PST's lesson                | PST describing how her lesson will go to the TE                 |  |
|                 |  |  |  | PST describing how the ELLs might struggle to the TE            |  |
|                 |  |  |  | PST and TE identifying how to support the ELLs if they struggle |  |
|                 |  | 51:12 - 51:32  | Describing the Simulation                      | PST and TE entering the classroom                               |  |
|                 |  |  |  | TE informing the PST on the ELLs she will be working with       |  |
| 51:33 - 52:30   | PST interacting with Edgar and then shifts to interacting with Edith | (For future analysis – does not align with purpose of study) |  |   |  |
| 52:31 - 1:01:46 | Interacting on the lesson during the simulation                      | 52:31 - 54:35  | Initial interactions on how to support Edith   | PST interacting with Edith to pick a picture                    |  |
|                 |  |  |  | PST asking TE for help  |  |
|                 |  |  |  | TE and PST identifying the problem                              |  |
|                 |  |  |  | TE and PST identifying one solution                             |  |
|                 |  |  |  | PST trying out the solution with Edith                          |  |
|                 |  | 54:36 - 54:47  | PST interacting with Edith                     |   |  |
|                 |  | 54:48 - 55:31  | Follow up interactions on how to support Edith | PST asking TE about the structure of the lesson                 |  |
|                 |  |  |  | TE informing the PST on how to work with Edith                  |  |
|                 |  |  |  | PST trying out the TE's suggestion with Edith                   |  |
|                 |  |  |  | TE informing PST about using short language                     |  |
|                 |  | 55:32 - 55:56  | PST interacting with Edith                     |   |  |

|                   |  |                   |   |   |
|-------------------|--|-------------------|---|---|
|                   |  | 55:57 - 56:37     | Informing how to use sentence frames with ELLs                    | PST informing the TE using sentence frames with ELLs is hard            |
|                   |  |                   |   | TE informing the PST on how to structure the lesson                     |
|                   |  | 56:38 - 58:50     | PST ends interaction with Edith and begins interacting with Edgar |   |
|                   |  | 58:51 - 1:01:46   | Interacting on how to support Edgar                               | PST interacting with Edgar to create a sentence about monkeys           |
|                   |  |                   |   | TE pausing the PST's lesson   |
|                   |  |                   |   | TE informing the PST what the problem is                                |
|                   |  |                   |   | PST and TE identifying how to solve the problem                         |
|                   |  |                   |   | PST trying out solution with Edgar                                      |
|                   |  | 1:01:47 - 1:03:23 | PST interacting with Edgar and PST finishes her lesson            | (For future analysis – does not align with purpose of study)            |
| 1:03:24 - 1:14:31 | Revisiting the lesson after the simulation | 1:03:24 - 1:03:42 | Ending the Simulation   | PST and TE exiting the classroom  |
|                   |  |                   |   | TE dismissing the avatars   |
|                   |  | 1:03:43 - 1:12:27 | Revisiting the Lesson   | PST and TE revisiting how the lesson went                               |
|                   |  |                   |   | TE asking the PST about the problems she faced                          |
|                   |  |                   |   | PST informing the TE the problems she faced                             |
|                   |  |                   |   | PST and TE revisiting a problem that occurred with Edith                |
|                   |  |                   |   | PST and TE revisiting solutions to the problems identified              |
|                   |  |                   |   | TE informing how to figure out which is the actual problem with the PST |
|                   |  | 1:12:28 - 1:14:21 | Synthesizing what was learned                                     | TE providing a sentence frame to the PST to help with synthesis         |
|                   |  |                   |   | PST and TE filling in the sentence frame                                |
|                   |  |                   |   | PST and TE describing the impact on student learning                    |
|                   |  | 1:14:22 - 1:14:31 | Ending the Session  | PST and TE ending the interaction                                       |

**APPENDIX L**  
**KATIE'S INSTRUCTIONAL MAP**

| Video Time    | Phase Units                                       | Video Time   | Instructional Sequence              | Interaction Units   |  |
|---------------|---|--|-------------------------------------|---|--|
| 8:58 - 13:45  | Interacting on the lesson prior to the simulation | 8:58 - 9:19  | Introductions                       | TE and PST Welcome & Greeting                                   |  |
|               |   |  |                                     | PST describing set up with TE                                   |  |
|               |   | 9:20 - 9:50  | Describing the Simulation           | TE describing the structure of the simulation to the PST        |  |
|               |   |  |                                     | TE describing how reflection will go to the PST                 |  |
|               |   | 9:51 - 12:58   | Interacting on the PST's lesson     | PST describing her lesson to the TE                             |  |
|               |   |  |                                     | PST describing how the ELLs might struggle to the TE            |  |
|               |   |  |                                     | PST and TE identifying how to support the ELLs if they struggle |  |
|               |   | 12:59 - 13:45  | Describing the Simulation           | TE describing how to begin and end the simulation to the PST    |  |
|               |   |  |                                     | PST and TE identifying when to end the lesson                   |  |
| 13:46 - 15:53 | PST interacting with Edith                        | (For future analysis – does not align with purpose of study) |                                     |   |  |
| 15:54 - 18:23 | Interacting on the lesson during the simulation   | 15:54 - 17:21  | Interacting on how to support Edith | PST ending interaction with Edith and switching to Edgar        |  |
|               |   |  |                                     | TE pausing the PST's lesson                                     |  |
|               |   |  |                                     | TE and PST identifying multiple solutions                       |  |
|               |   |  |                                     | PST trying out conclusion with Edith                            |  |
|               |   | 17:22 - 18:02  | PST interacting with Edith          |   |  |
|               |   | 18:03 - 18:23  | Discussing the Lesson Structure     | PST asking the TE about the structure of her lesson             |  |
| 18:24 - 22:58 | PST interacting with Edgar                        | (For future analysis – does not align with purpose of study) |                                     |   |  |
| 22:59 - 31:56 | Revisiting the lesson after the simulation        | 22:59 - 23:18  | Ending the Simulation               | PST exiting classroom   |  |
|               |   |  |                                     | TE dismissing the avatars                                       |  |
|               |   | 23:19 - 28:23  | Revisiting the Lesson               | PST informing the TE the problem she faced                      |  |
|               |   |  |                                     | PST and TE revisiting solutions to the problem identified       |  |
|               |   |  |                                     | TE describing the topic to reflect on to PST                    |  |
|               |   |  |                                     | PST describing her introductions to TE                          |  |

|  |  |               |  |  |
|--|--|---------------|--|--|
|  |  |               |  | TE describing topic of comparing introductions to PST  |
|  |  | 28:24 - 29:10 | Interruption                           | TE informing PST about creating breakout room          |
|  |  |               |  | PST informing TE about setting up wait room            |
|  |  | 29:11 - 29:48 | Follow up to Interacting on the Lesson | TE and PST revisiting the differences in introductions |
|  |  | 29:49 - 31:26 | Synthesizing what was learned          | TE informing PST on the importance of synthesis        |
|  |  |               |  | PST and TE filling in the sentence frame               |
|  |  | 31:27 - 31:56 | Ending the Session                     | TE thanking the PST and explaining the next steps      |
|  |  |               |  | PST and TE ending the interaction                      |

**APPENDIX M**  
**TYLER'S INSTRUCTIONAL MAP**

| Video Time    | Phase Units                                       | Video Time   | Instructional Sequence                               | Interaction Units  |  |
|---------------|---|--|--|--|--|
| 33:27 - 37:10 | Interacting on the lesson prior to the simulation | 33:27 - 33:58  | Apologizing for mix up                               | TE apologizing to PST  |  |
|               |   |  |  | TE informing PST of mix up   |  |
|               |   | 33:59 - 34:05  | Introductions  | TE and PST Welcome & Greeting  |  |
|               |   | 34:06 - 34:30  | Describing the Simulation                            | TE describing the structure of the simulation to the PST                         |  |
|               |   | 34:31 - 36:59  | Interacting on the PST's lesson                      | PST informing the lesson prompt to the TE  |  |
|               |   |  |  | PST describing his lesson to the TE  |  |
|               |   |  |  | PST and TE describing the structure of the lesson                                |  |
|               |   |  |  | PST describing how the ELLs might struggle and how to provide supports to the TE |  |
| 37:00 - 37:10 | Describing the Simulation                         | TE describing how to begin and end the simulation to the PST |  |  |  |
| 37:11 - 38:11 | PST interacting with Edith                        | (For future analysis – does not align with purpose of study) |  |  |  |
| 38:12 - 48:15 | Interacting on the lesson during the simulation   | 38:12 - 40:57  | Interacting on how to support Edith                  | PST interacting with Edith to choose an animal                                   |  |
|               |   |  |  | PST and TE identifying the problem   |  |
|               |   |  |  | PST and TE identifying a solution  |  |
|               |   |  |  | PST and TE identifying another solution  |  |
|               |   |  |  | PST choosing a solution to try out   |  |
|               |   |  |  | TE informing PST how to use less language  |  |
|               |   |  |  | PST trying out solution with Edith   |  |
|               |   | 40:58 - 46:07  | PST interacting with Edgar                           |  |  |
|               |   | 46:08 - 48:15  | Interacting on how to end the interaction with Edgar | PST ending interaction with Edgar  |  |
|               |   |  |  | PST and TE identifying how to end the interaction with Edgar                     |  |
|               |   |  |  | PST trying out the ending  |  |
|               |   |  |  | TE asking the PST about another ending   |  |
|               |   |  |  | PST trying out another ending  |  |
|               |   |  |  | PST and TE identifying a different possibility for ending the interaction        |  |
|               |   |  |  | PST trying out the ending  |  |
| 48:16 - 49:56 | PST interacting with Edgar                        | (For future analysis – does not align with purpose of study) |  |  |  |



|               |  |               |                                    |   |
|---------------|--|---------------|------------------------------------|---|
| 49:57 - 54:13 | Revisiting the lesson after the simulation | 49:57 - 50:02 | Initial ending of simulation       | PST and TE exiting classroom                                    |
|               |  | 50:03 - 50:36 | Initial Revisiting of the Lesson   | PST informing TE how the lesson went                            |
|               |  | 50:37 - 51:16 | Follow up to ending the simulation | TE dismissing the avatars                                       |
|               |  | 51:17 - 52:36 | Follow up to Revisiting the Lesson | PST and TE revisiting solving the problem                       |
|               |  |               |                                    | PST describing solutions for the second problem                 |
|               |  | 52:37 - 54:00 | Synthesizing what was learned      | TE providing a sentence frame to the PST to help with synthesis |
|               |  |               |                                    | PST and TE filling in the sentence frame                        |
|               |  | 54:01 - 54:13 | Ending the Session                 | PST and TE ending the interaction                               |

**APPENDIX N**  
**EMILY'S INSTRUCTIONAL MAP**

| Video Time                         | Phase Units                                       | Video Time   | Instructional Sequence  | Interaction Units  |  |
|------------------------------------|---|--|---|--|--|
| 4:11 - 8:40                        | Interacting on the lesson prior to the simulation | 4:11 - 4:22  | Apologizing for issue   | TE apologizing to PST  |  |
|                                    |   | 4:23 - 4:44  | Introductions   | TE and PST Welcome and Greeting  |  |
|                                    |   | 4:45 - 6:he19  | Describing the Simulation   | TE describing the structure of the simulation to the PST                     |  |
|                                    |   |  |   | PST clarifying the levels of the avatars with the TE                         |  |
|                                    |   |  |   | PST clarifying what the lesson is with the TE                                |  |
|                                    |   |  |   | PST and TE informing on the number of sentence frames                        |  |
|                                    |   |  |   | TE describing how reflection will go to the PST                              |  |
|                                    |   | 6:20 - 8:18  | Interacting on the PST's lesson                                   | PST describing her lesson to the TE  |  |
|                                    |   |  |   | TE describing how to use the sentence frames to the PST                      |  |
|                                    |   |  |   | PST describing how the ELLs might struggle and how to support them to the TE |  |
|                                    |   | 8:19 - 8:40  | Describing the Simulation   | TE describing how to begin and end the simulation to the PST                 |  |
|                                    |   |  |   | TE informing the PST to enter the classroom                                  |  |
| 8:41 - 9:26                        | PST interacting with Edith                        | (For future analysis – does not align with purpose of study) |   |  |  |
| 9:27 - 20:47                       | Interacting on the lesson during the simulation   | 9:27 - 12:01   | Interacting on how to support Edith                               | PST interacting with Edith with a picture                                    |  |
|                                    |   |  |   | TE pausing the PST's lesson  |  |
|                                    |   |  |   | PST and TE identifying the problem   |  |
|                                    |   |  |   | PST and TE identifying a solution  |  |
|                                    |   |  |   | PST and TE identifying multiple solutions                                    |  |
|                                    |   |  |   | PST choosing a solution to try out   |  |
|                                    |   |  |   | PST and TE understanding the chosen solution                                 |  |
|                                    |   | PST trying out the solution with Edith                       |   |  |  |
|                                    |   | 12:02 - 13:45  | PST ends interaction with Edith and begins interacting with Edgar |  |  |
|                                    |   | 13:46 - 17:55  | Interacting on how to support Edgar                               | PST interacting with Edgar about grass                                       |  |
| PST asking TE for help             |   |  |   |  |  |
| PST and TE identifying the problem |   |  |   |  |  |

|               |  |  |  |  |
|---------------|--|--|--|--|
|               |  |  |  | PST and TE identifying a solution                              |
|               |  |  |  | PST and TE identifying another solution                        |
|               |  |  |  | TE asking the PST for another solution                         |
|               |  |  |  | PST and TE identifying the pros for the first solution         |
|               |  |  |  | PST and TE identifying the cons for the first solution         |
|               |  |  |  | PST and TE identifying the pros for the second solution        |
|               |  |  |  | PST and TE identifying the cons for the second solution        |
|               |  |  |  | PST choosing a solution to try out                             |
|               |  |  |  | TE informing the PST how to restart in the simulation          |
|               |  |  |  | PST trying out the solution with Edgar                         |
|               |  |  | 17:56 - 18:56                                  | PST interacting with Edgar                                     |
|               | 18:57 - 20:47  | Second interaction of how to support Edgar                   | PST ending interaction with Edgar              |  |
|               |  |  | PST and TE identifying the problem             |  |
|               |  |  | PST and TE identifying a solution              |  |
|               |  |  | TE informing the PST another possible solution |  |
|               |  |  | PST trying out the solution with Edgar         |  |
| 20:48 - 26:16 | PST ends interaction with Edgar, interacts with Edith, and ends her lesson | (For future analysis – does not align with purpose of study) |  |  |
| 26:17 - 39:32 | Revisiting the lesson after the simulation                                 | 26:17 - 26:49  | Ending the simulation                          | PST exiting classroom  |
|               |  |  |  | TE dismissing the avatars                                      |
|               |  | 26:50 - 37:37  | Revisiting the Lesson                          | PST and TE revisiting a problem                                |
|               |  |  |  | PST and TE revisiting why it was a problem                     |
|               |  |  |  | PST and TE revisiting solutions to the problem                 |
|               |  |  |  | PST and TE revisiting an example from the simulation           |
|               |  |  |  | PST and TE describing switching the sentence frames            |
|               |  |  |  | PST and TE describing how to use the sentence frame with Edith |
|               |  |  | PST describing how the lesson went to the TE   |  |

|  |  |               |                               |   |
|--|--|---------------|-------------------------------|---|
|  |  |               |                               | PST and TE revisiting if the pictures helped Edith                            |
|  |  |               |                               | PST and TE revisiting when the pictures didn't help Edith                     |
|  |  |               |                               | PST and TE revisiting how to solve the problem                                |
|  |  |               |                               | TE asking PST if they can reflect on one more thing                           |
|  |  |               |                               | PST and TE discussing using one choice with sentence frames                   |
|  |  |               |                               | PST and TE identifying a con for using only one choice with an L3             |
|  |  |               |                               | PST and TE identifying a pro for using only one choice with an L3             |
|  |  |               |                               | PST and TE describing if it is best to use one choice or more than one choice |
|  |  |               |                               | PST and TE describing what to do if the ELL struggles with the choices        |
|  |  |               |                               | PST and TE situating the solution to an event in the simulation               |
|  |  |               |                               | PST and TE revisiting the experience as a whole                               |
|  |  |               |                               | PST and TE describing MELTS   |
|  |  | 37:38 - 39:27 | Synthesizing what was learned | TE providing a sentence frame to the PST to help with synthesis               |
|  |  |               |                               | PST and TE filling in the sentence frame                                      |
|  |  | 39:28 - 39:32 | Ending the Interaction        | PST and TE ending the interaction   |

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